CCD-SP5E

SERVICE MANUAL

AEP Model
UK Model

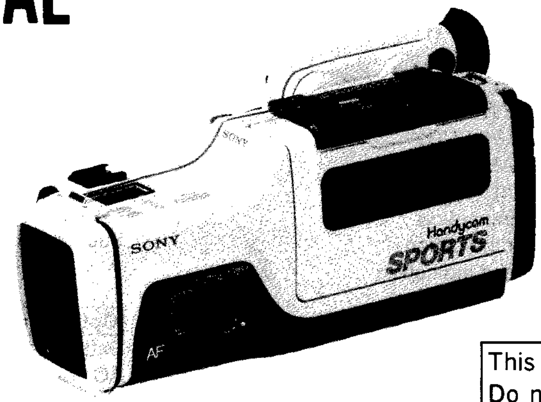


PHOTO : YELLOW

This is a waterproof type for daily life.
Do not use this in the water.

Video 8

CCD-SP5E is almost same specifications as that of CCD-F340E except for cabinet and small board in the contents.
This Service manual discribes the difference between CCD-SP5E and CCD-F340E. For repair, please read this manual with CCD-F340E service manual.

SPECIFICATIONS

System

Video recording system	Rotary two heads, Helical scanning FM system
Audio recording system	Rotary head, FM system
Video signal	PAL colour, CCIR standards
Usable cassette	8 mm video format cassette
Tape speed	SP: Approx. 20.051 mm/sec. LP: Approx. 10.058 mm/sec.
Recording time	SP mode: 1 hour 30 min LP mode: 3 hours (P5-90)
Playback time	SP mode: 1 hour 30 min LP mode: 3 hours (P5-90)
Fast forward time	Approx. 6 min. 30 sec. (P5-90)
Image device	CCD (Charge Coupled Device)
Viewfinder	Electronic viewfinder (black and white)
Lens	Combined 6 × power zoom lens f = 9 – 54 mm, F1.4 with macro Filter diameter: 46 mm
Auto focus system	Infrared autofocus
Color temperature	Auto: From the light at a tungsten lamp to the light on a slightly overcast day.
Minimum illumination	7 lux
Illumination range	7 lux 100,000 lux (0.8 – 9,294 footcandles)
Recommended illumination	More than 300 lux (28 footcandles)
Aperture correction	Automatic

Input and output connector

Video output	Phono jack, 1 Vp-p, 75 ohms unbalanced, sync negative
Audio output	Phono jack, −10dBs, at load impedance less than 2.2 kilohms
RFU DC OUT	Special minijack, 5V DC
Earphone jack	Minijack, 8-ohm impedance
Remote jack	Stereo mini-minijack
MIC jack	Minijack, −66 dBs, low impedance With 2.5 – 3 V DC output, impedance 6.8 kilohms
Microphone power output jack	Special minijack, 5 V DC

— continued on next page —

8 VIDEO CAMERA RECORDER

SONY®

MICROFILM

Display in the viewfinder

Mode and caution indicators
Mode: REC/STBY
  BACK LIGHT
  ZERO MEM
Caution: BATTERY
  DEW
  TAPE END
  CASSETTE
  CAUTION
Time/date indication
Title colour indication
Shutter speed indication
Recording/battery lamp

General

Power requirements	Battery compartment 6 V/7.5 V
Power consumption	6.5 W (camera recording) including the viewfinder
Installation	Vertically
Operating temperature	0°C to 40°C (32°F to 104°F)
Storage temperature	−20°C to +60°C (−4°F to +140°F)
Dimensions	Approx. 136 × 137 × 331 mm (w/h/d) (5 3/8 ×5 1/2×13 1/8 in.)
Weight	Approx. 1.6 kg (3 lb 8 oz) excluding the battery and cassette
Microphone	Electret condenser microphone, omni-directional monaural type
Supplied accessories	Lithium battery CR2025 (1) Carrying case (1)

Optional accessories

Battery pack NP-55, NP-77
AC power adaptor AC-V55
Car battery cord DCC-16AE
Connecting cable
  VMC-910MS/920MS (2 phono to 3 phono)
  VMC-710M/720M (2 phono to 2 phono)
  VMC-262M(2 phono to 6-pin),
  VMC-2104M (4 phono to 21-pin)

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

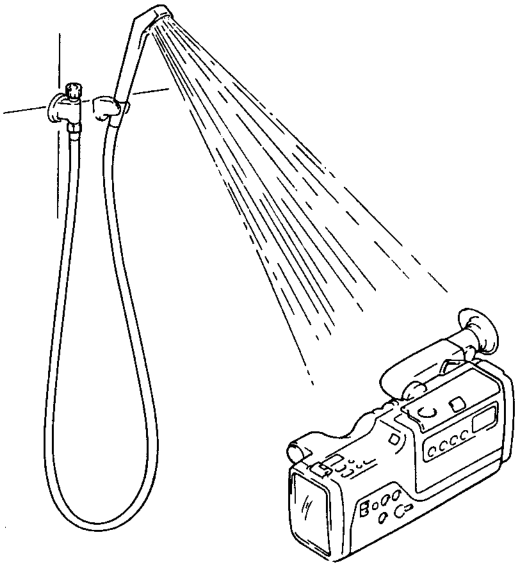
TYPICAL DIFFERENCE

Change of parts name due to the change of cabinet and small boards.

CCD-F340E		CCD-SP5E
MC-24 board	→	MC-29 board MJ-19 board
PA-13 board	→	PA-14 board
SW-92 board	→	SW-93 board
ZM-8 board	→	ZM-9 board
FC-16 board	→	FC-19 board TI-13 board
FD-6 board	→	FD-9 board
FV-1 board	→	FV-3 board
EJ-4 board	→	EJ-6 board
VF-13 board	→	VF-20 board
TL-18 board	→	TL-21 board
TL-19 board	→	TL-24 board

How to check the drip-proof function after the completion of repair.

Install a shower at the tap and check if there is any leakage of water by sprinkling water over the main body evently.



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- **For mechanical adjustment;**
  refer to the separate volume, "8 mm Video MECHANICAL ADJUSTMENT MANUAL TYPE3 (O' MECHANISM)".

- **For electrical adjustment;**
  refer to CCDF340E service manual.

SECTION 1
GENERAL

1-1. NOTES

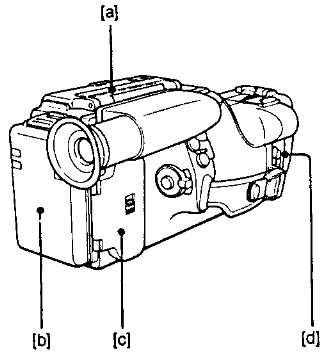
- The splash-proof CCD-SP5E has some resistance to water and moisture and makes it possible to use the unit outdoors. **Exposure to water and moisture is not recommended.**
- For "once-only" events, it is strongly recommended to have a trial run to check that everything is working perfectly.
- Television programmes, films, video tapes and other materials may be copyrighted. Unauthorized recording of such material may be contrary to the provisions of the copyright laws.
- PCM recording/playback is not possible with this unit. The PCM sound recorded or after-recorded with another recorder cannot be played back with this unit.
- For using the recorder abroad, see page 52.
- The following units are packed with the CCD-SP5E video camera recorder.
  - Battery pack NP-55
  - Battery pack holder NPA-SP7
  - AC power adaptor AC-V30
  - RFU adaptor RFU-89EA/ASA
  - Shoulder strap
  - 8mm cassette tape
  - Carrying bag

  For details on these units, please read their instruction manuals.

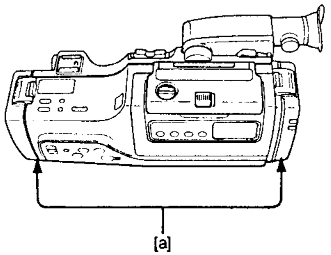
> This unit uses 8 mm video format cassettes. It records in the SP mode (approximately 20.051 mm/second) and the LP mode (approximately 10.058 mm/second) and can play back in the SP mode and the LP mode. The quality of the playback picture in the LP mode, however, will not be as good as that in the SP mode.

1-2. NOTES ON USE ON THE SEA OR AT THE BEACH

A-1



A-2



On Operation

- **Do not use the unit under water.**
- Avoid opening the top cover [a], the battery cover [b], the jack cover [c] or the lens cover [d] on the sea or at the beach. A-1
  Operations such as installing and changing a cassette tape or the battery should be done in a place with low humidity and no sea breeze.
- The splash-proof integrity of the unit is maintained by the battery cover, the lens cover, the top cover, the jack cover and the rubber gasket. Be especially careful not to damage or deform those areas.
- If you cannot avoid leaving the unit in the sun, be sure to cover it with a towel or similar.
- Do not throw the unit into the water.
- Do not change a battery with a wet hand.
- Before opening the buckle or the cover, clean the unit with a dry soft cloth.
- Before recording, clean the lens cover.

On the rubber gasket A-2

- The rubber gaskets [a] assure the splash-proof function of this unit. To maintain splash-proof integrity, handle them properly. Incorrect operation may cause water leakage.
- Check that there are no scratches or cracks on the rubber gaskets. Scratches or cracks may cause water leakage.
- Remove foreign materials such as dust and sand completely from the rubber gaskets and the grooves and the surfaces of the body in contact with the rubber gasket.
- Useful life of the rubber gasket depends upon maintenance and the frequency of use, but we recommend changing them once a year at your Sony service facility.

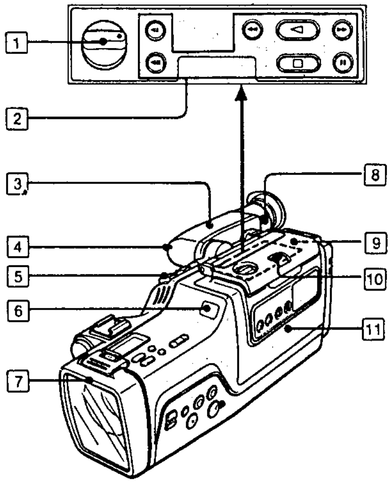
On Cleaning

After recording at a location subject to sea breezes, clean the unit with a soft cloth lightly moistened with mild detergent solution. If water drops remain on the unit, the metal parts may rust. Do not wash the unit under running water or use any type of solvent, such as alcohol or benzine for cleaning, as this might damage the finish.

> Sony does not accept liability for damage to the video camera recorder, battery, etc. or for cost of recording if water leakage occurs as a result of incorrect operation.

1-3. LOCATION AND FUNCTION OF PARTS AND CONTROLS

B-1



For details on the use of each control, refer to the pages indicated in the circle.

B-1

[1] **POWER switch**
CAMERA: For camera recording
PLAYER: For playing back or editing tapes
OFF: Power off

[2] **Tape transport buttons**
◀ (playback)
◀◀ FF (fast forward)
▶▶ REW (rewind)
■ (stop)
❚❚ (pause)
◀❚❚ (frame-by-frame)
◀❚ (slow)

[3] **Viewfinder**
The picture being recorded or played back can be monitored in monochrome here. Also, data such as caution indicators and function mode are displayed on the viewfinder screen.

[4] **Camera recording/battery lamp**
Lights during camera recording. It blinks when the battery is exhausted.

[5] **Power zoom button**

[6] **White balance sensor**
This is the sensor for auto white balance adjustment.
During recording, do not cover the sensor.

[7] **Lens cover**

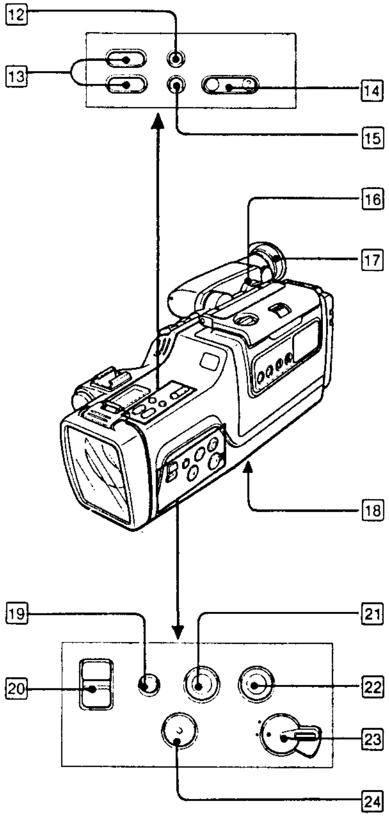
[8] **Viewfinder lens adjustment ring**
Adjust to your eyesight to assure good focus. Be sure to adjust this ring when shooting for the first time.

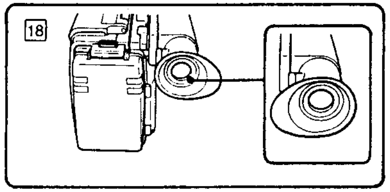
[9] **EJECT (cassette eject) button**
Located inside the top panel cover.

[10] **Top panel open button**

[11] **Cassette holder**

B-2





B-2

[12] **ZERO MEM (zero memory) button**
Used to memorize the counter zero point.

[13] **DATE and TIME buttons**
Press to display or turn off the date or time.

[14] **EDITSEARCH button**

[15] **RESET button**
Press to reset the counter to zero.

[16] **Viewfinder lock lever**
While pressing this lever, turn up the viewfinder.

[17] **Eyecup**
The eyecup is attached for the right eye. For the left eye, detach the eyecup holder and attach it as illustrated.

[18] **Tripod receptacle**

[19] **MACRO set button**

[20] **Focus adjustment button**

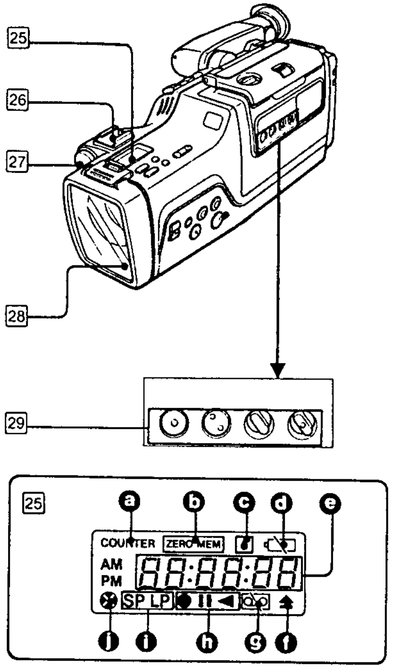
[21] **FOCUS button**
Used for manual focusing.

[22] **SHUTTER SPEED button**
Used to select the shutter speed.

[23] **AUTO LOCK switch**
Normally set to the AUTO LOCK position for auto focusing, automatic iris adjustment and normal shutter speed. To adjust these items manually, set this switch to the upper position.

[24] **BACK LIGHT button**

B-3



B-3

25 Display window

ⓐ COUNTER indicator
ⓑ ZERO MEM (memory) indicator
ⓒ Moisture condensation inside the unit.
ⓓ Blinks when the battery is weak.
ⓔ Indicates the time, date, or the tape count.
ⓕ Blinks when moisture has condensed on the tape, when the tape approaches its end during camera recording.
ⓖ Lights steadily when no cassette is inserted. Blinks when the tape approaches its end.
ⓗ Tape operation mode indicators
ⓘ Tape speed indicator
ⓙ Lights when the slit in the head is clogged.

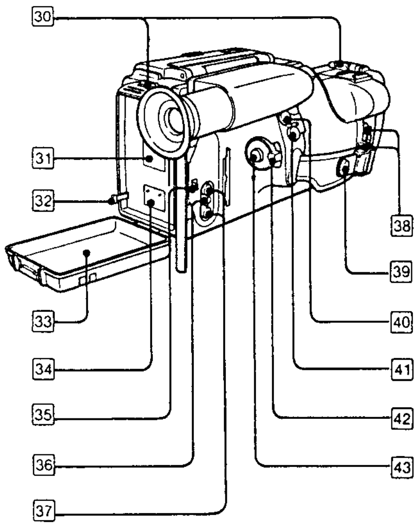
26 Accessory shoe
Attach an optional external microphone, video light, etc.

27 Built-in microphone (monaural)

28 Infrared beam emitter and detector
Transmits an infrared beam toward the object to be shot and receives the beam reflected from the object during auto focusing. Do not look into it for a long time when recording with auto focusing. Do not cover here.

29 SUPERIMPOSE buttons
Used to record the title.
TITLE 1 button
TITLE 2 button
MEMORY button
COLOR button

B-4



B-4

30 Hooks for shoulder strap
Attach a shoulder strap.
Be careful that the shoulder strap does not cover the white balance sensor, built-in microphone or lens.

31 Lithium battery compartment

32 BATT (battery eject) knob

33 Battery cover

34 Battery mounting surface

35 REC MODE (recording mode)/EDIT switch
Switch it depending on the operating mode.

Mode	Recording	Playback	Editing
Setting	SP LP	EDIT	EDIT
Function	REC MODE switch	EDIT switch	

36 RFU DC OUT (RFU adaptor DC output) jack (special minijack)
Supplies power to the RFU-89EA/ASA RFU adaptor.

37 VIDEO/AUDIO OUT (output) jacks (phono jacks)

38 MIC jack and DC OUT (microphone power output) jack
Connect an external microphone.
The MIC jack accepts Sony "plug-in-power" microphones and supplies power to them.

39 Grip strap

40 🎧 (earphone) jack (minijack)

41 REMOTE connector (stereo mini-minijack)

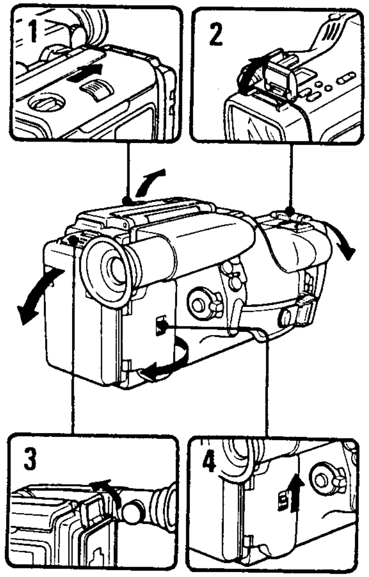
42 STANDBY switch
Set to STANDBY to set the unit to recording pause mode.

43 START/STOP button
Press to start and stop camera recording.

Note
The earphone jack and REMOTE connector are not splash-proof.

1-4. TO OPEN EACH SPLASH-PROOF COVER

C



1 **Top cover**
- To insert or eject the cassette.

Slide the OPEN button on the top cover in the direction of the arrow.

2 **Lens cover**
- To clean the lens.
- To attach the filter or conversion lens.

Release the buckle.

3 **Battery cover**
- To install or remove the battery pack.
- To use the AC power adaptor or battery pack holder

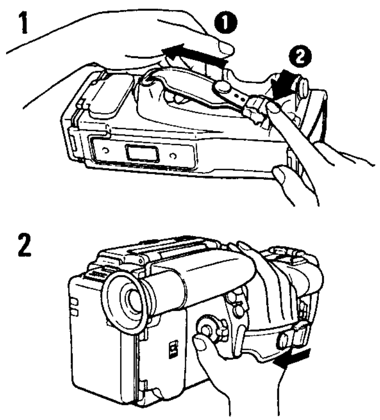
Release the buckle and turn the cover 180 degrees down. The battery cover is removed. To attach the battery cover, hook the bottom of the battery cover on the catches of the video camera recorder.

4 **Jack cover**
- To connect the equipment to be used with this unit.

Slide the LOCK/RELEASE button to the RELEASE position.

1-5. ADJUSTING THE GRIP STRAP

D



Adjust the length so that your thumb can easily manipulate the START/STOP button. D

1 Loosen the grip strap.
❶ Pulling the strap,
❷ push to unfasten the stopper.
2 Pull to adjust the length of the strap.

1-6. CHECK LIST BEFORE RECORDING

To make sure you don't miss those "once in a lifetime" scenes, go over the following check list and make the necessary preparations.

Required for recording

CCD-SP5E	
Battery pack NP-55 or NP-77	Is it charged? Are there enough battery packs to cover the planned recording time?
Cassette tapes	Have you prepared enough tapes to cover the planned recording time?

Convenient accessories

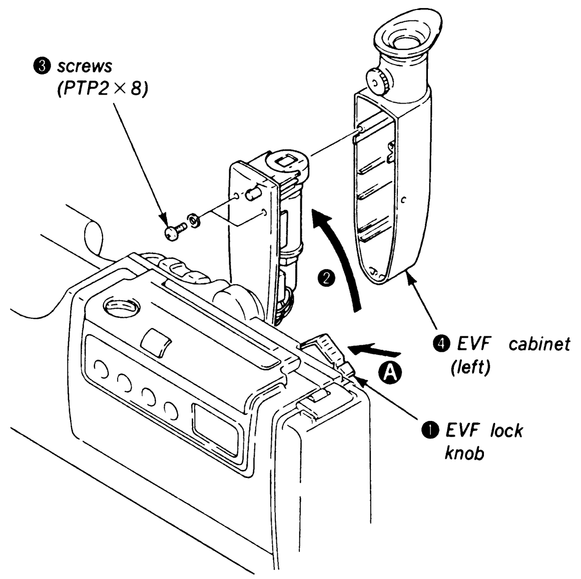
Carrying case	
Shoulder strap	
Tripod	Required for scenes in which stability of the camera is important. Tripod mount screw must match the receptacle mount.
AC power adaptor	Used to operate the video camera recorder on house current and to charge battery packs
RFU adaptor RFU-89EA/ASA	Adaptor for connection to a TV or VTR which is not equipped with video/audio inputs.
Video light HVL-50DA	Required for recording in low light situations.
Earphone (miniplug)	Permits monitoring of audio signal during recording.

SECTION 2
DISASSEMBLY

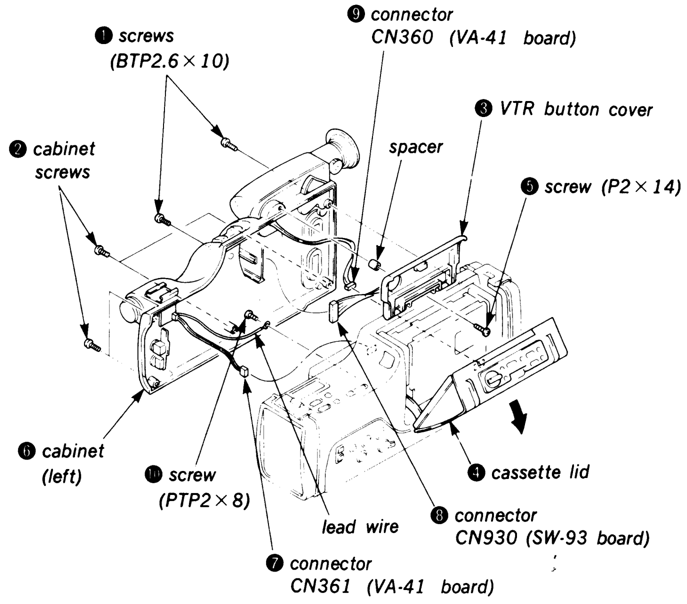
Refer to CCD-F340E service manual for the following items.

- REMOVING THE LS LID
- OPENING THE VA-41 BOARD
- OPENING THE SS-86 BOARD
- REMOVING THE CASSETTE ARM
- REMOVING LS CASSETTE COMPARTMENT ASSEMBLY

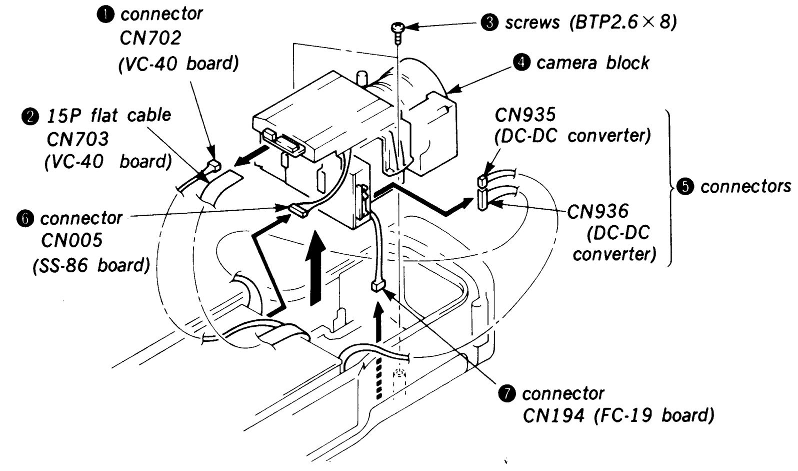
2-1. REMOVING THE VIEWFINDER


③ screws
(PTP2 × 8)
②
④ EVF cabinet
(left)
Ⓐ
① EVF lock
knob

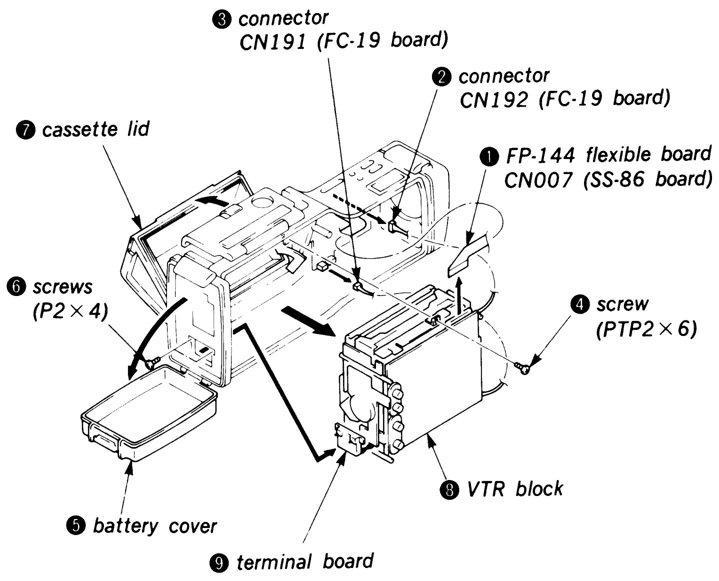
2-2. REMOVING THE CABINET (LEFT)


① screws
(BTP2.6 × 10)
⑨ connector
CN360 (VA-41 board)
③ VTR button cover
② cabinet
screws
spacer
⑤ screw (P2 × 14)
⑥ cabinet
(left)
⑩ screw
(PTP2 × 8)
lead wire
⑦ connector
CN361 (VA-41 board)
⑧ connector
CN930 (SW-93 board)
④ cassette lid

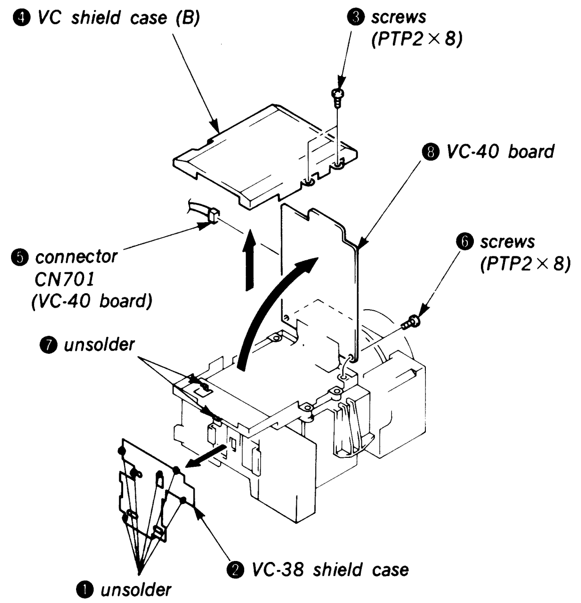
2-3. REMOVING THE CAMERA BLOCK

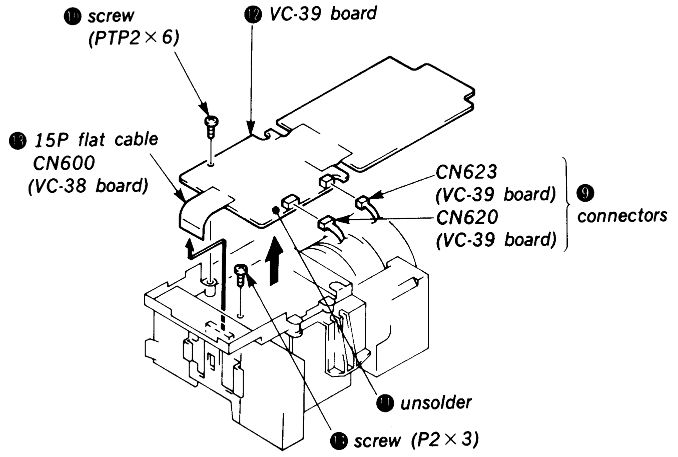

① connector
CN702
(VC-40 board)
③ screws (BTP2.6 × 8)
④ camera block
② 15P flat cable
CN703
(VC-40 board)
CN935
(DC-DC converter)
⑤ connectors
⑥ connector
CN005
(SS-86 board)
CN936
(DC-DC
converter)
⑦ connector
CN194 (FC-19 board)

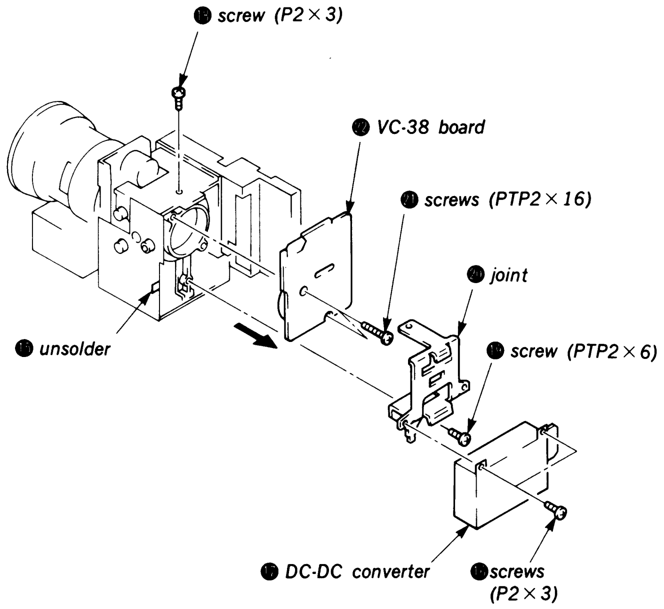
2-4. REMOVING THE VTR BLOCK


③ connector
CN191 (FC-19 board)
② connector
CN192 (FC-19 board)
⑦ cassette lid
① FP-144 flexible board
CN007 (SS-86 board)
⑥ screws
(P2 × 4)
④ screw
(PTP2 × 6)
⑧ VTR block
⑤ battery cover
⑨ terminal board

2-5. REMOVING THE VC-38 (CCD IMAGER), VC-39 AND VC-40 BOARDS


④ VC shield case (B)
③ screws
(PTP2 × 8)
⑧ VC-40 board
⑤ connector
CN701
(VC-40 board)
⑥ screws
(PTP2 × 8)
⑦ unsolder
② VC-38 shield case
① unsolder


⑩ screw
(PTP2 × 6)
⑫ VC-39 board
⑬ 15P flat cable
CN600
(VC-38 board)
CN623
(VC-39 board)
CN620
(VC-39 board)
⑨
connectors
⑪ unsolder
⑭ screw (P2 × 3)


⑯ screw (P2 × 3)
㉒ VC-38 board
㉑ screws (PTP2 × 16)
⑳ joint
⑮ unsolder
⑲ screw (PTP2 × 6)
⑰ DC-DC converter
⑱ screws
(P2 × 3)

3-1. CIRCU

FD
(C
(S

BTP2.6×8)

ra block

onverter)

❺ connectors

N936

(DC-DC

converter)

tor

4 (FC-19 board)

or

(FC-19 board)

-144 flexible board

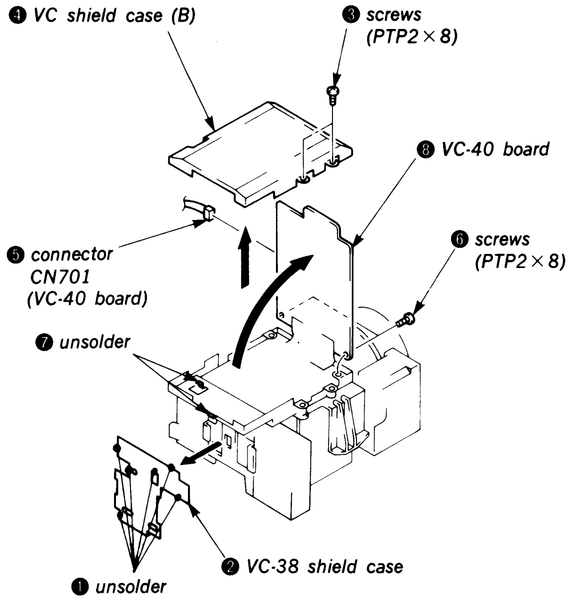
007 (SS-86 board)

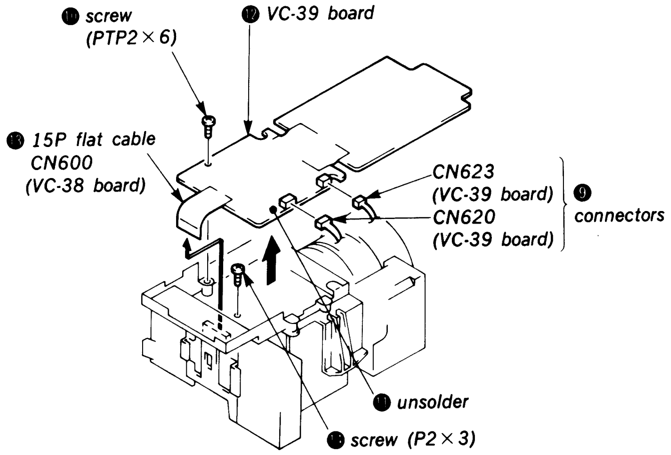
❹ screw

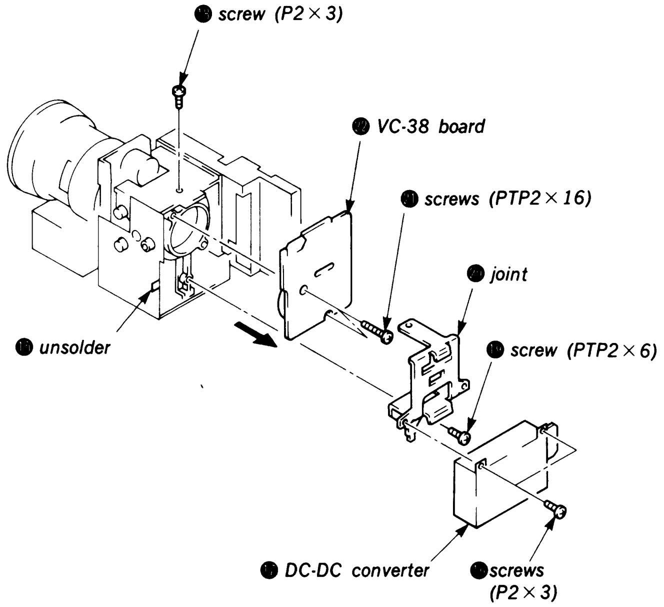
(PTP2×6)

ock

2-5. REMOVING THE VC-38 (CCD IMAGER), VC-39 AND VC-40 BOARDS

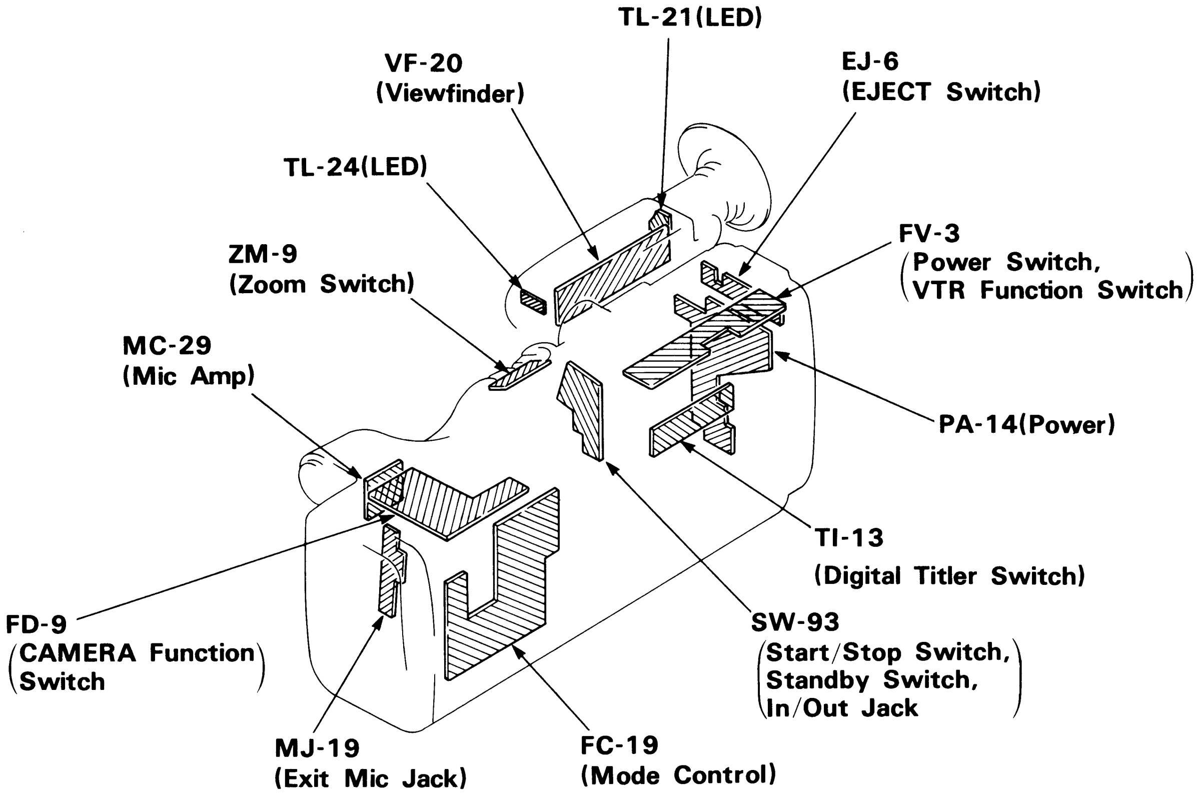

❹ VC shield case (B)
❸ screws (PTP2×8)
❽ VC-40 board
❻ screws (PTP2×8)
❺ connector CN701 (VC-40 board)
❼ unsolder
❷ VC-38 shield case
❶ unsolder

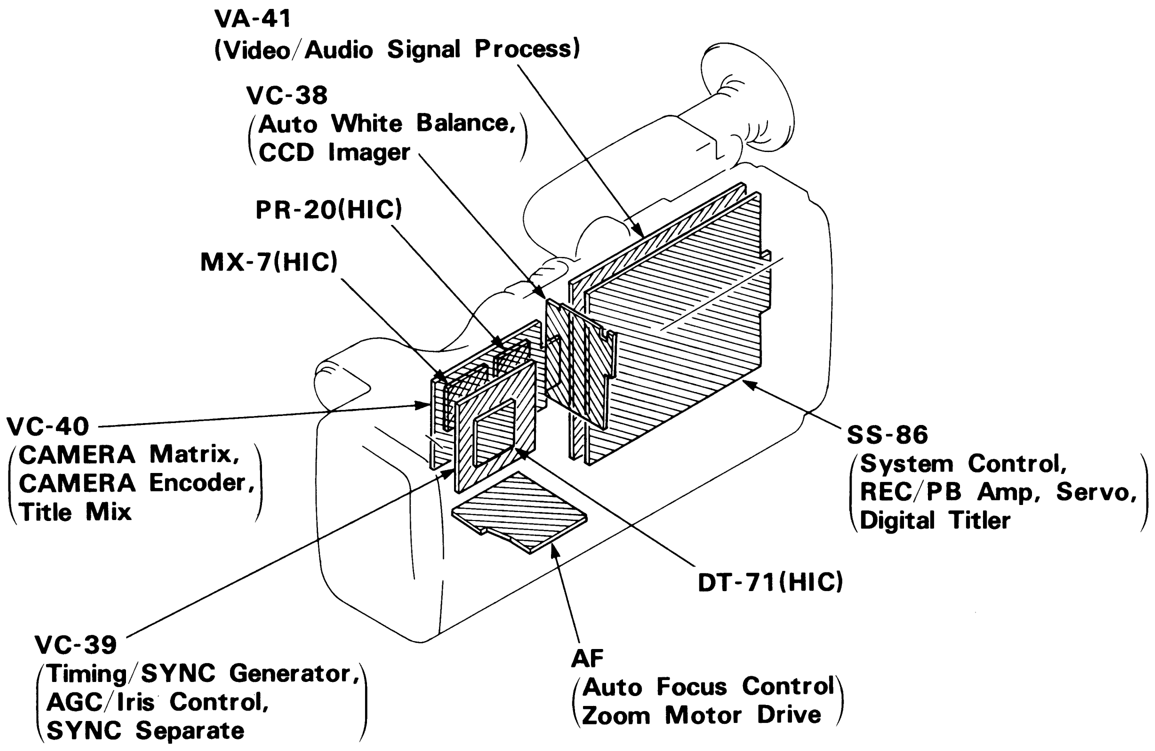

❿ screw (PTP2×6)
⓬ VC-39 board
⓭ 15P flat cable CN600 (VC-38 board)
CN623 (VC-39 board)
CN620 (VC-39 board)
❾ connectors
⓫ unsolder
⓮ screw (P2×3)


⓳ screw (P2×3)
㉒ VC-38 board
㉑ screws (PTP2×16)
⓴ joint
⓲ screw (PTP2×6)
⓯ unsolder
⓱ DC-DC converter
⓰ screws (P2×3)

SECTION 3
DIAGRAMS

3-1. CIRCUIT BOARDS LOCATION


TL-21(LED)
VF-20 (Viewfinder)
EJ-6 (EJECT Switch)
TL-24(LED)
FV-3 (Power Switch, VTR Function Switch)
ZM-9 (Zoom Switch)
MC-29 (Mic Amp)
PA-14(Power)
TI-13 (Digital Titler Switch)
FD-9 (CAMERA Function Switch)
SW-93 (Start/Stop Switch, Standby Switch, In/Out Jack)
MJ-19 (Exit Mic Jack)
FC-19 (Mode Control)

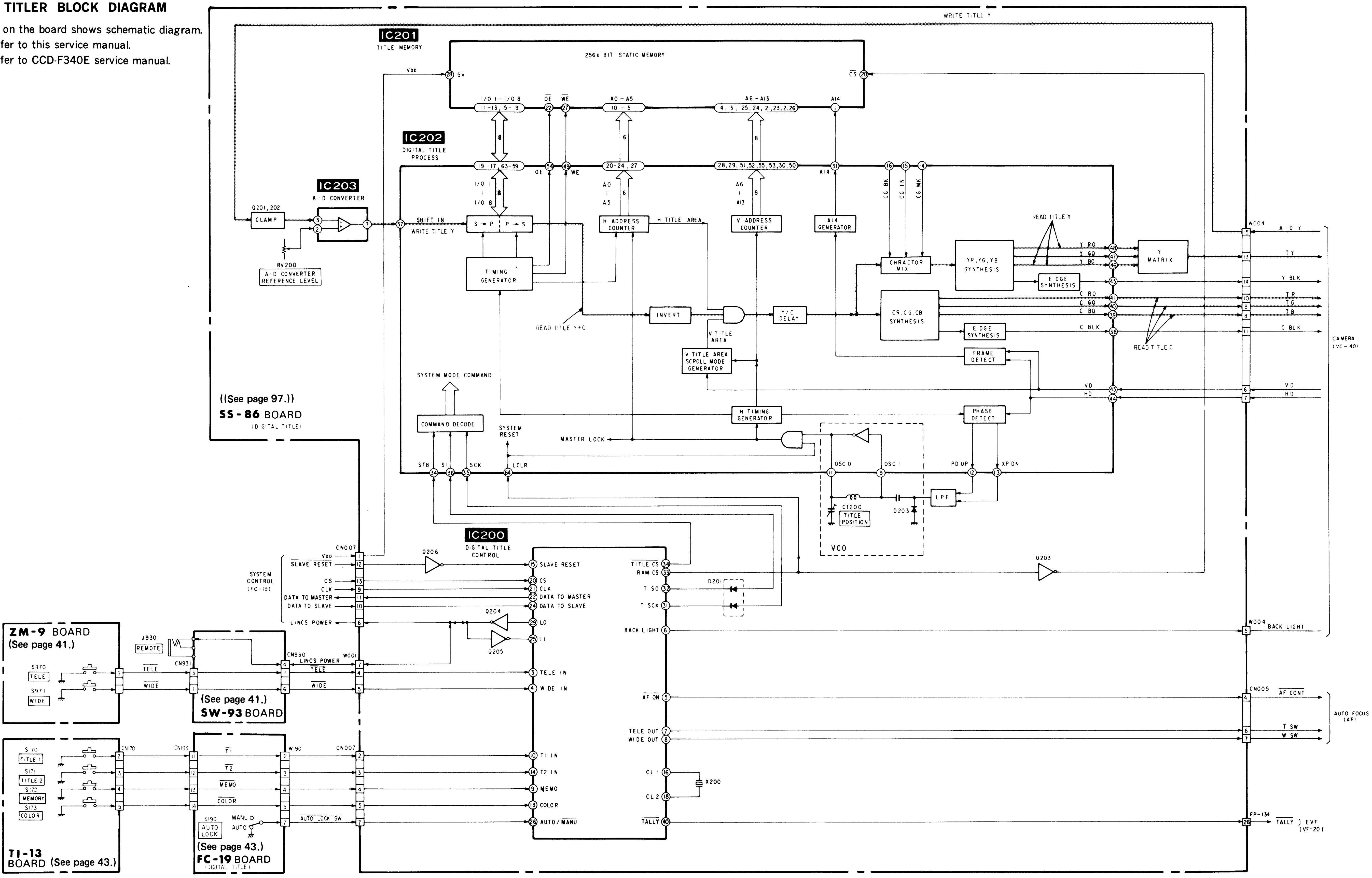

VA-41 (Video/Audio Signal Process)
VC-38 (Auto White Balance, CCD Imager)
PR-20(HIC)
MX-7(HIC)
VC-40 (CAMERA Matrix, CAMERA Encoder, Title Mix)
SS-86 (System Control, REC/PB Amp, Servo, Digital Titler)
DT-71(HIC)
VC-39 (Timing/SYNC Generator, AGC/Iris Control, SYNC Separate)
AF (Auto Focus Control Zoom Motor Drive)

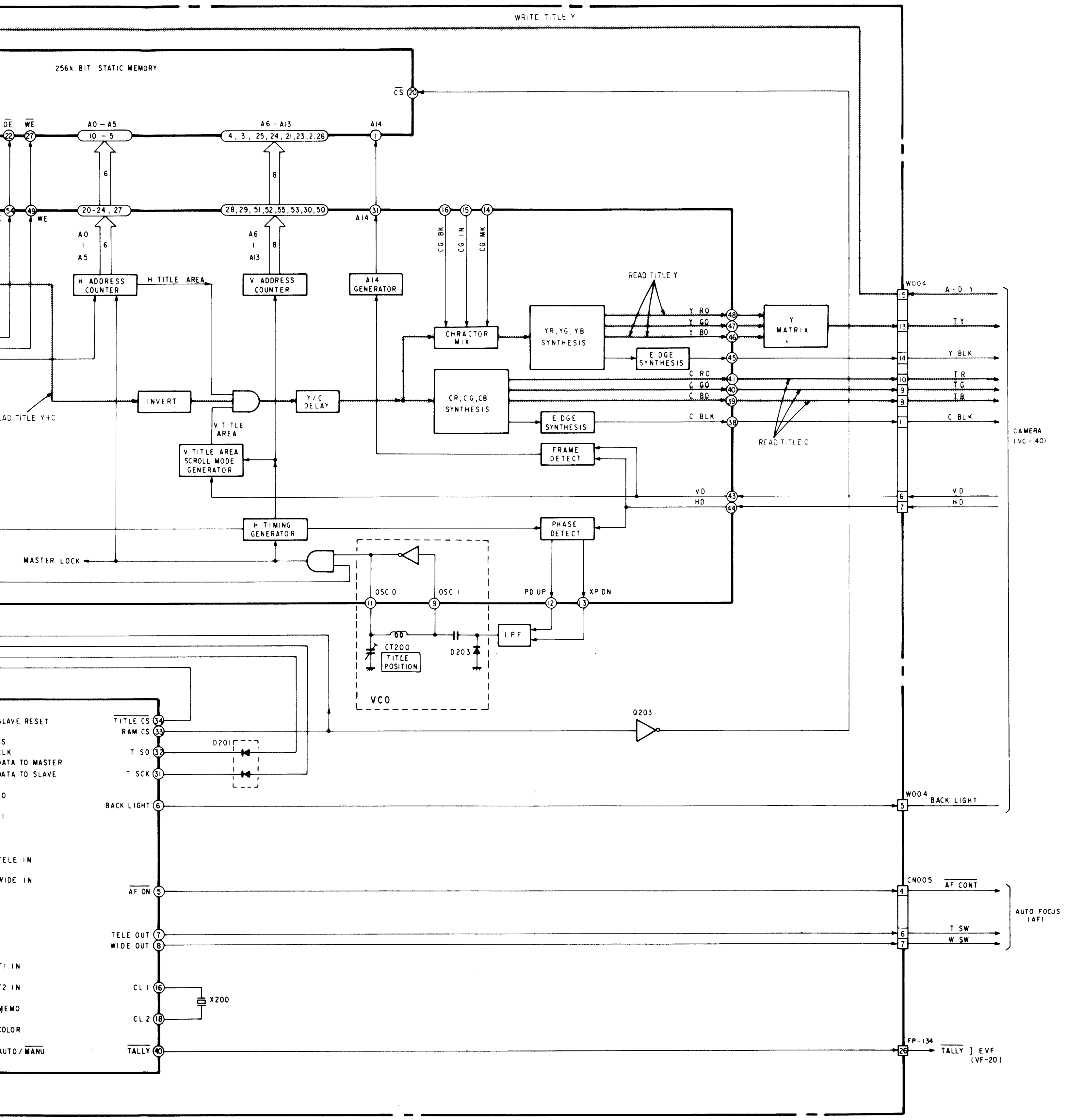
3-3. DIGITAL TITLER BLOCK DIAGRAM

- Number of page on the board shows schematic diagram.

( )mark : refer to this service manual.

(( ))mark : refer to CCD-F340E service manual.


WRITE TITLE Y
IC201
TITLE MEMORY
256k BIT STATIC MEMORY
VDD
28 5V
CS 20
I/O 1 - I/O 8
11-13, 15-19
OE 22
WE 27
A0 - A5
10 - 5
A6 - A13
4, 3, 25, 24, 21, 23, 2, 26
A14
IC202
DIGITAL TITLE PROCESS
19-17, 63-59
54 OE
49 WE
20-24, 27
28, 29, 51, 52, 55, 53, 30, 50
31 A14
16 15 14
CG BK
CG IN
CG MK
I/O 1 ~ I/O 8
A0 ~ A5
A6 ~ A13
IC203
A-D CONVERTER
Q201, 202
CLAMP
RV200
A-D CONVERTER REFERENCE LEVEL
SHIFT IN
WRITE TITLE Y
S→P
P→S
TIMING GENERATOR
H ADDRESS COUNTER
H TITLE AREA
V ADDRESS COUNTER
A14 GENERATOR
READ TITLE Y
CHRACTOR MIX
YR, YG, YB SYNTHESIS
EDGE SYNTHESIS
Y MATRIX
Y RO
Y GO
Y BO
INVERT
Y/C DELAY
CR, CG, CB SYNTHESIS
C RO
C GO
C BO
C BLK
EDGE SYNTHESIS
READ TITLE C
READ TITLE Y+C
V TITLE AREA
V TITLE AREA SCROLL MODE GENERATOR
FRAME DETECT
SYSTEM MODE COMMAND
COMMAND DECODE
SYSTEM RESET
MASTER LOCK
H TIMING GENERATOR
PHASE DETECT
VD
HD
STB
SI
SCK
LCLR
OSC O
OSC I
PD UP
XP DN
LPF
CT200
TITLE POSITION
D203
VCO
W004
A-D Y
TY
Y BLK
TR
TG
TB
C BLK
VD
HD
CAMERA (VC-401)
((See page 97.))
SS-86 BOARD
(DIGITAL TITLE)
IC200
DIGITAL TITLE CONTROL
Q206
Q203
CN007
VDD
SLAVE RESET
SYSTEM CONTROL (FC-19)
CS
CLK
DATA TO MASTER
DATA TO SLAVE
LINCS POWER
15 SLAVE RESET
20 CS
21 CLK
22 DATA TO MASTER
24 DATA TO SLAVE
29 LO
25 LI
Q204
Q205
TITLE CS 34
RAM CS 33
T SO 32
T SCK 31
D201
BACK LIGHT 6
W004
BACK LIGHT
ZM-9 BOARD
(See page 41.)
S970
TELE
S971
WIDE
J930
REMOTE
CN931
CN930
LINCS POWER
W001
TELE
WIDE
(See page 41.)
SW-93 BOARD
3 TELE IN
4 WIDE IN
AF ON 5
CN005
AF CONT
AUTO FOCUS (AF)
TELE OUT 7
WIDE OUT 8
T SW
W SW
S170
TITLE 1
S171
TITLE 2
S172
MEMORY
S173
COLOR
CN170
CN193
T1
T2
MEMO
COLOR
W190
S190
AUTO LOCK
MANU
AUTO
AUTO LOCK SW
10 T1 IN
14 T2 IN
9 MEMO
13 COLOR
26 AUTO/MANU
CL1 16
CL2 18
X200
TALLY 40
FP-134
TALLY
EVF (VF-20)
TI-13
BOARD (See page 43.)
(See page 43.)
FC-19 BOARD
(DIGITAL TITLE)

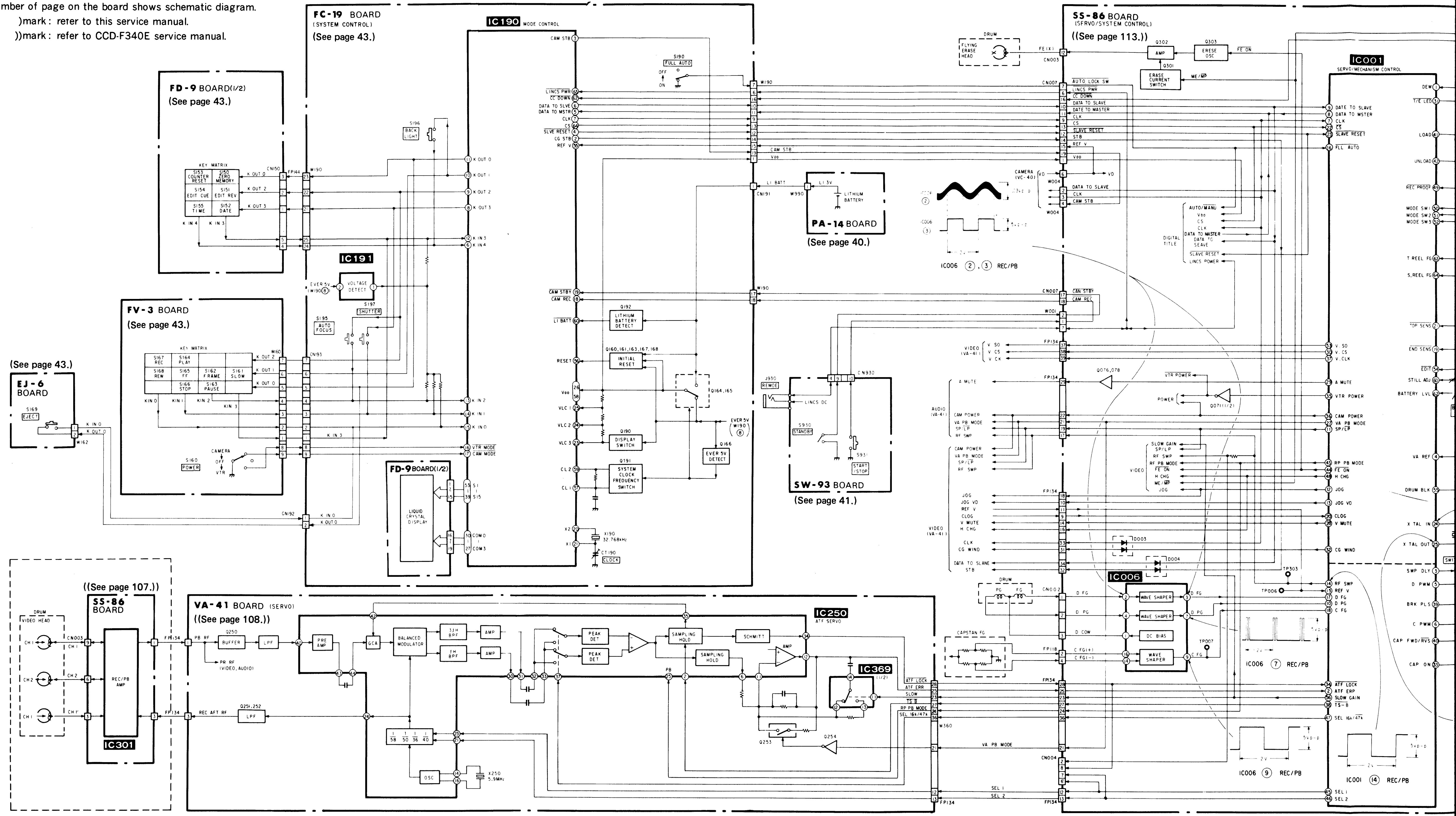

WRITE TITLE Y
256k BIT STATIC MEMORY
CS 20
OE 22
WE 27
A0 - A5
10 - 5
A6 - A13
4, 3, 25, 24, 21, 23, 2, 26
A14
6
8
20-24, 27
28, 29, 51, 52, 55, 53, 30, 50
31
16
15
14
WE
A0
A5
A6
A13
A14
CG BK
CG IN
CG MK
H ADDRESS COUNTER
H TITLE AREA
V ADDRESS COUNTER
A14 GENERATOR
READ TITLE Y
CHRACTOR MIX
YR, YG, YB SYNTHESIS
Y RO
Y GO
Y BO
EDGE SYNTHESIS
Y MATRIX
INVERT
Y/C DELAY
CR, CG, CB SYNTHESIS
C RO
C GO
C BO
C BLK
EDGE SYNTHESIS
READ TITLE C
READ TITLE Y+C
V TITLE AREA
V TITLE AREA SCROLL MODE GENERATOR
FRAME DETECT
VD
HD
H TIMING GENERATOR
PHASE DETECT
MASTER LOCK
OSC O
OSC I
PD UP
XP DN
LPF
CT200
TITLE POSITION
D203
VCO
Q203
W004
A-D Y
TY
Y BLK
TR
TG
TB
C BLK
VD
HD
CAMERA (VC-40)
SLAVE RESET
TITLE CS
RAM CS
D201
T SO
T SCK
DATA TO MASTER
DATA TO SLAVE
BACK LIGHT
W004
BACK LIGHT
TELE IN
WIDE IN
AF ON
CN005
AF CONT
AUTO FOCUS (AF)
T SW
W SW
TELE OUT
WIDE OUT
CL1
CL2
X200
TALLY
FP-134
TALLY
EVF (VF-20)
MEMO
COLOR
AUTO/MANU

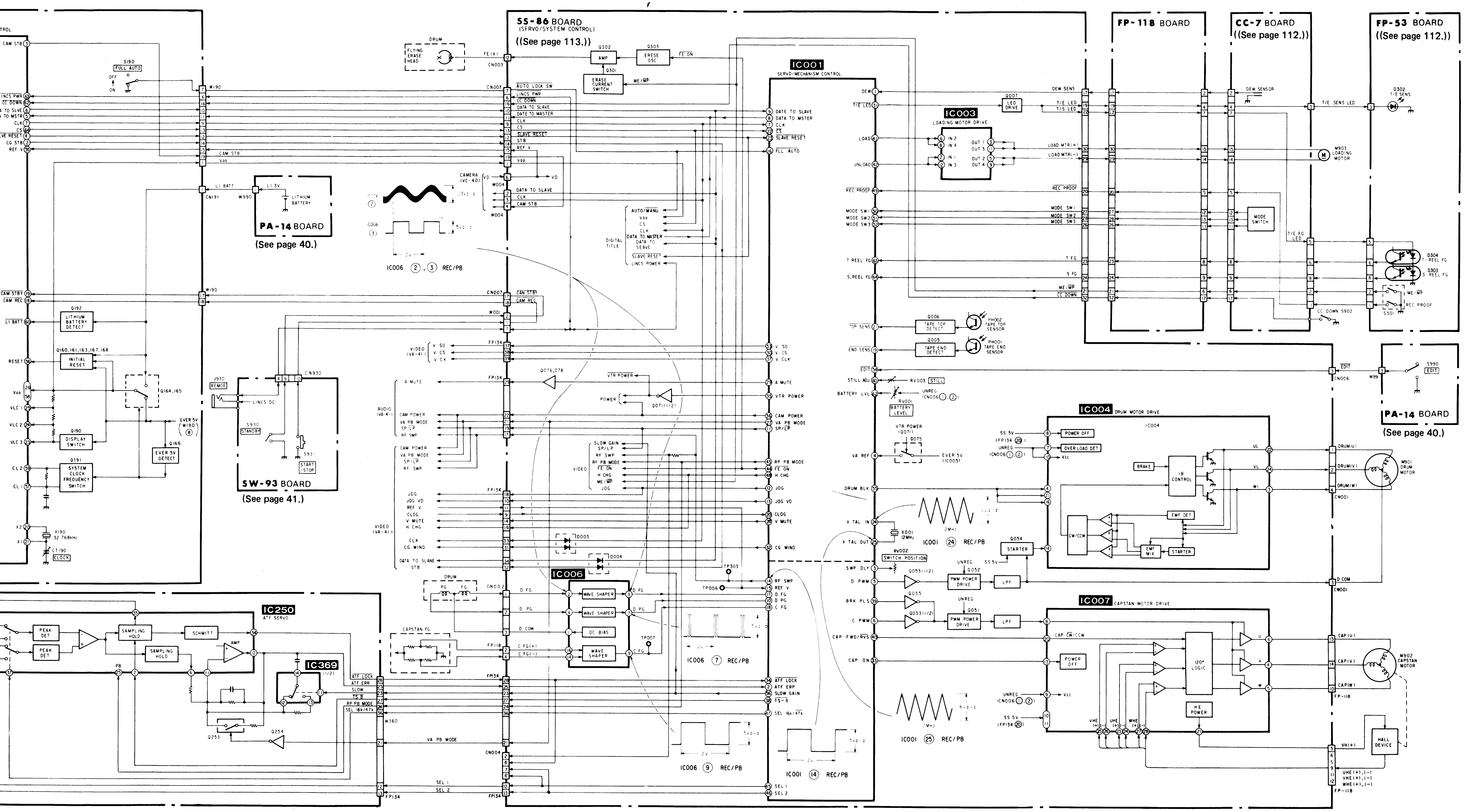
3-4. SERVO/SYSTEM CONTROL BLOCK DIAGRAM

- Number of page on the board shows schematic diagram.

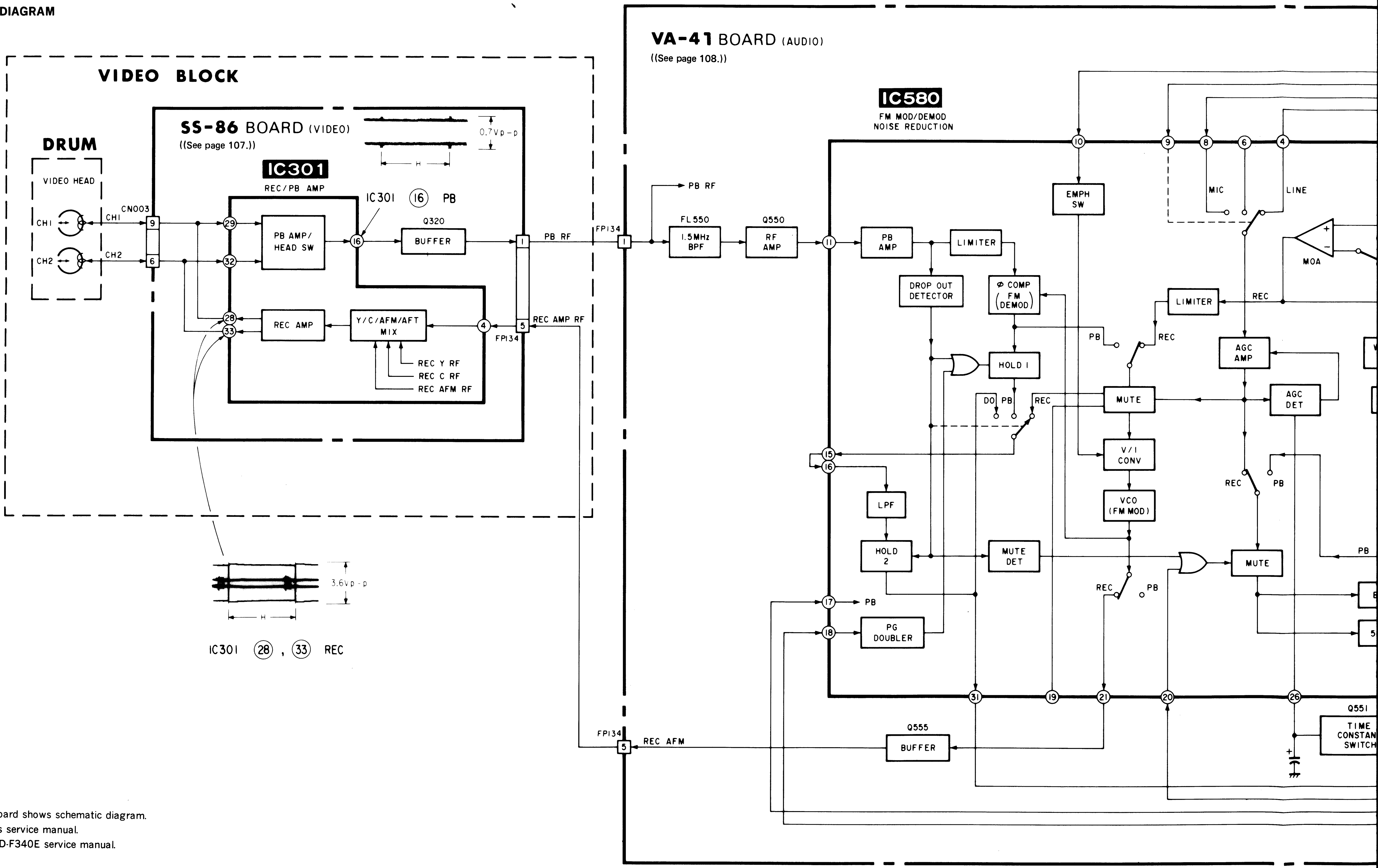
( )mark : reter to this service manual.

(( ))mark : refer to CCD-F340E service manual.

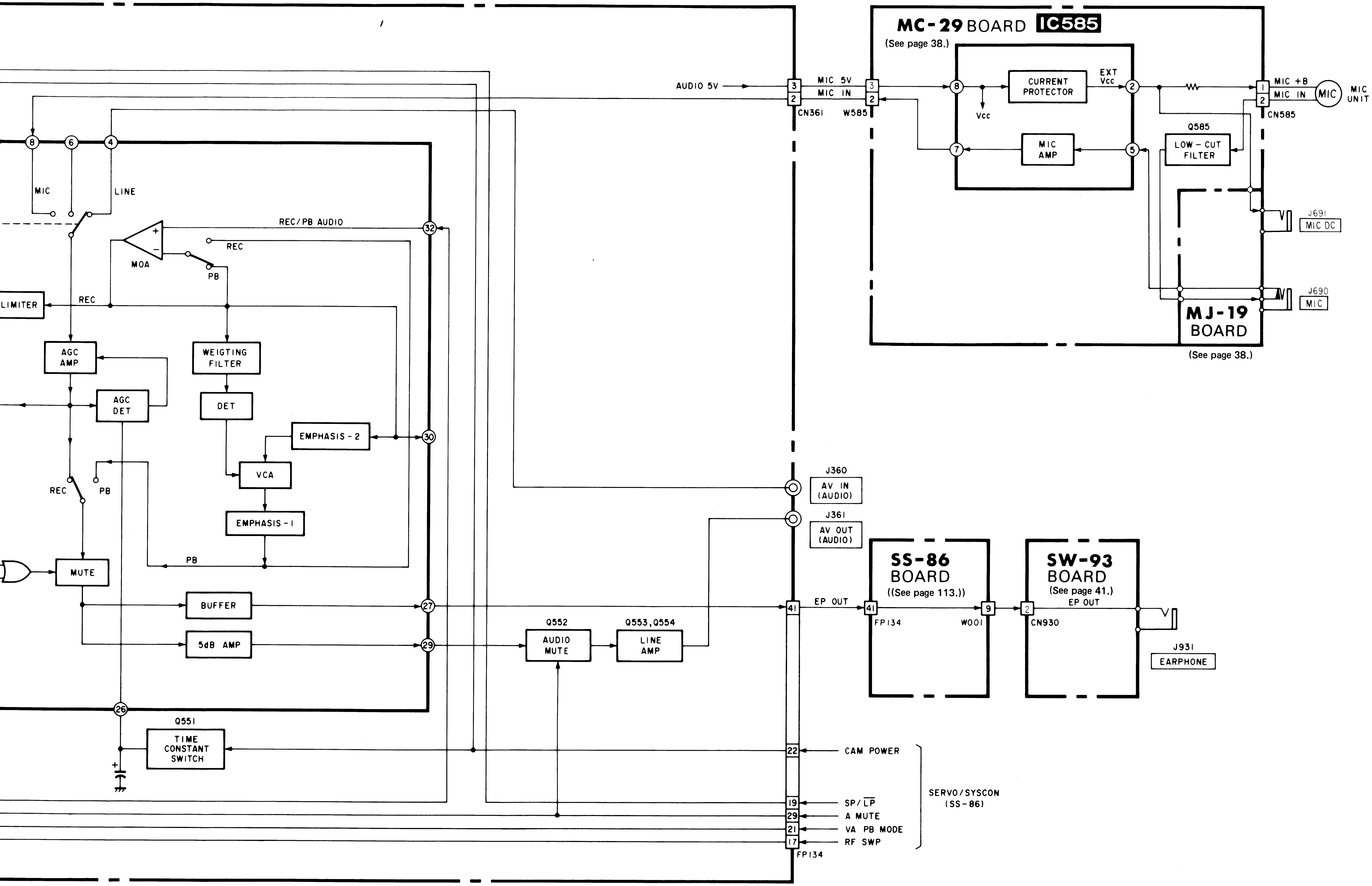

FC-19 BOARD (SYSTEM CONTROL)
(See page 43.)
IC190 MODE CONTROL
FD-9 BOARD(1/2)
(See page 43.)
KEY MATRIX
S153 COUNTER RESET
S150 ZERO MEMORY
S154 EDIT CUE
S151 EDIT REV
S155 TIME
S152 DATE
FV-3 BOARD
(See page 43.)
S167 REC
S164 PLAY
S168 REW
S165 FF
S162 FRAME
S161 SLOW
S166 STOP
S163 PAUSE
S160 POWER
CAMERA OFF VTR
(See page 43.)
EJ-6 BOARD
S169 EJECT
IC191
VOLTAGE DETECT
S196 BACK LIGHT
S197 SHUTTER
S195 AUTO FOCUS
S190 FULL AUTO
FD-9 BOARD(1/2)
LIQUID CRYSTAL DISPLAY
Q192 LITHIUM BATTERY DETECT
Q160,161,163,167,168 INITIAL RESET
Q164,165
Q190 DISPLAY SWITCH
Q191 SYSTEM CLOCK FREQUENCY SWITCH
Q166 EVER 5V DETECT
X190 32.768kHz
CT190 CLOCK
PA-14 BOARD
(See page 40.)
LITHIUM BATTERY
SW-93 BOARD
(See page 41.)
J930 REMOTE
S930 STANDBY
S931 START/STOP
SS-86 BOARD (SERVO/SYSTEM CONTROL)
((See page 113.))
DRUM FLYING ERASE HEAD
Q302 AMP
Q303 ERESE OSC
Q301 ERASE CURRENT SWITCH
IC001 SERVO/MECHANISM CONTROL
IC006 ②, ③ REC/PB
Q076,078
Q071(1/2)
IC006
WAVE SHAPER
DC BIAS
CAPSTAN FG
IC006 ⑦ REC/PB
IC006 ⑨ REC/PB
IC001 ⑭ REC/PB
D003
D004
TP303
TP006
TP007
((See page 107.))
SS-86 BOARD
DRUM VIDEO HEAD
REC/PB AMP
IC301
VA-41 BOARD (SERVO)
((See page 108.))
IC250 ATF SERVO
Q250 BUFFER
LPF
PRE AMP
GCA
BALANCED MODULATOR
31H BPF
FM BPF
AMP
PEAK DET
SAMPLING HOLD
SCHMITT
IC369 (1/2)
Q251,252 LPF
Q253
Q254
OSC
X250 5.9MHz
PB RF
REC AFT RF
VA PB MODE
SEL 1
SEL 2
ATF LOCK
ATF ERR
SLOW
TS-B
RP PB MODE
SEL 16k/47k


SS-86 BOARD
(SERVO/SYSTEM CONTROL)
((See page 113.))
FP-118 BOARD
CC-7 BOARD
((See page 112.))
FP-53 BOARD
((See page 112.))
PA-14 BOARD
(See page 40.)
SW-93 BOARD
(See page 41.)
PA-14 BOARD
(See page 40.)
IC001
SERVO/MECHANISM CONTROL
IC003
LOADING MOTOR DRIVE
IC004 DRUM MOTOR DRIVE
IC007 CAPSTAN MOTOR DRIVE
IC006
IC250
ATF SERVO
IC369
DRUM
FLYING ERASE HEAD
Q302 AMP
Q303 ERESE OSC
Q301 ERASE CURRENT SWITCH
FE ON
ME/MP
LITHIUM BATTERY
S190 FULL AUTO
Q192 LITHIUM BATTERY DETECT
Q160,161,163,167,168 INITIAL RESET
Q190 DISPLAY SWITCH
Q191 SYSTEM CLOCK FREQUENCY SWITCH
X190 32.768kHz
CT190 CLOCK
Q164,165
Q166 EVER 5V DETECT
J930 REMOTE
S930 STANDBY
S931 START/STOP
IC006 ②,③ REC/PB
IC006 ⑦ REC/PB
IC006 ⑨ REC/PB
IC001 ⑭ REC/PB
IC001 ㉔ REC/PB
IC001 ㉕ REC/PB
WAVE SHAPER
DC BIAS
CAPSTAN FG
D003
D004
Q076,078
Q07(1/2)
PEAK DET
SAMPLING HOLD
SCHMITT
AMP
Q253
Q254
Q007 LED DRIVE
Q006 TAPE TOP DETECT
PH002 TAPE TOP SENSOR
Q005 TAPE END DETECT
PH001 TAPE END SENSOR
RV003 STILL
RV001 BATTERY LEVEL
VTR POWER (Q071)
Q075
X001 12MHz
RV002 SWITCH POSITION
Q054 STARTER
Q053(1/2)
Q052 PWM POWER DRIVE
Q055
Q051 PWM POWER DRIVE
LPF
POWER OFF
OVER LOAD DET
BRAKE
18 CONTROL
EMF DET
CW/CCW
EMF MIX
STARTER
120° LOGIC
HE POWER
M903 LOADING MOTOR
M901 DRUM MOTOR
M902 CAPSTAN MOTOR
HALL DEVICE
MODE SWITCH
D302 T/E SENS
D304 T-REEL FG
D303 S-REEL FG
S301 REC PROOF
CC DOWN S902
S990 EDIT
DEW SENSOR

3-5. AUDIO BLOCK DIAGRAM


VIDEO BLOCK
DRUM
VIDEO HEAD
CH1
CH2
CN003
SS-86 BOARD (VIDEO)
((See page 107.))
0.7Vp-p
H
IC301
REC/PB AMP
IC301 ⑯ PB
PB AMP/
HEAD SW
Q320
BUFFER
PB RF
REC AMP
Y/C/AFM/AFT
MIX
REC Y RF
REC C RF
REC AFM RF
REC AMP RF
FP134
3.6Vp-p
IC301 ㉘, ㉝ REC
VA-41 BOARD (AUDIO)
((See page 108.))
IC580
FM MOD/DEMOD
NOISE REDUCTION
PB RF
FL550
1.5MHz
BPF
Q550
RF
AMP
PB
AMP
LIMITER
DROP OUT
DETECTOR
φ COMP
(FM DEMOD)
HOLD 1
DO
PB
REC
EMPH
SW
MIC
LINE
MOA
LIMITER
REC
PB
AGC
AMP
AGC
DET
MUTE
V/I
CONV
VCO
(FM MOD)
LPF
HOLD
2
MUTE
DET
MUTE
PG
DOUBLER
Q555
BUFFER
REC AFM
Q551
TIME
CONSTAN
SWITCH

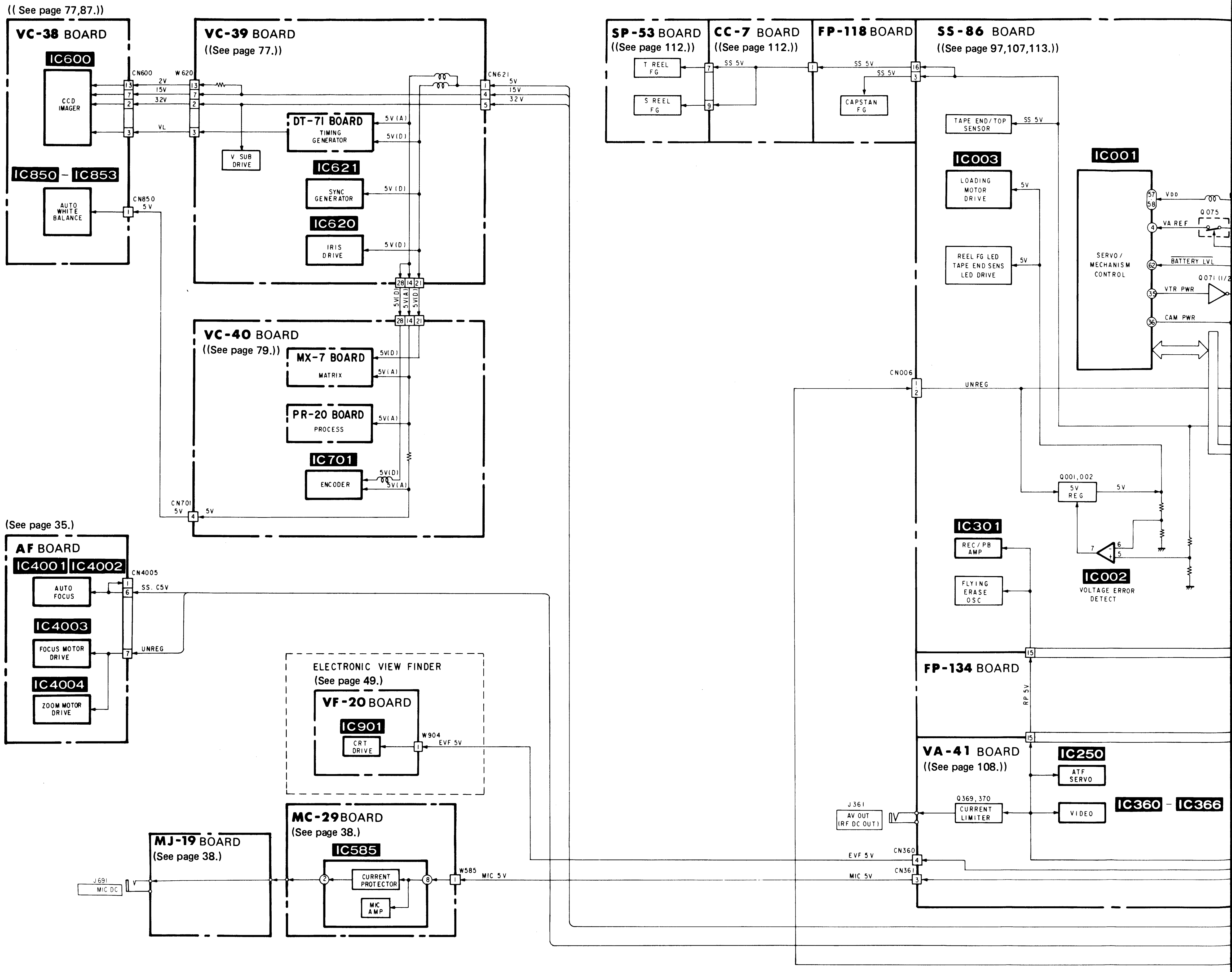
● Number of page on the board shows schematic diagram.
(   )mark: refer to this service manual.
((   ))mark: refer to CCD-F340E service manual.

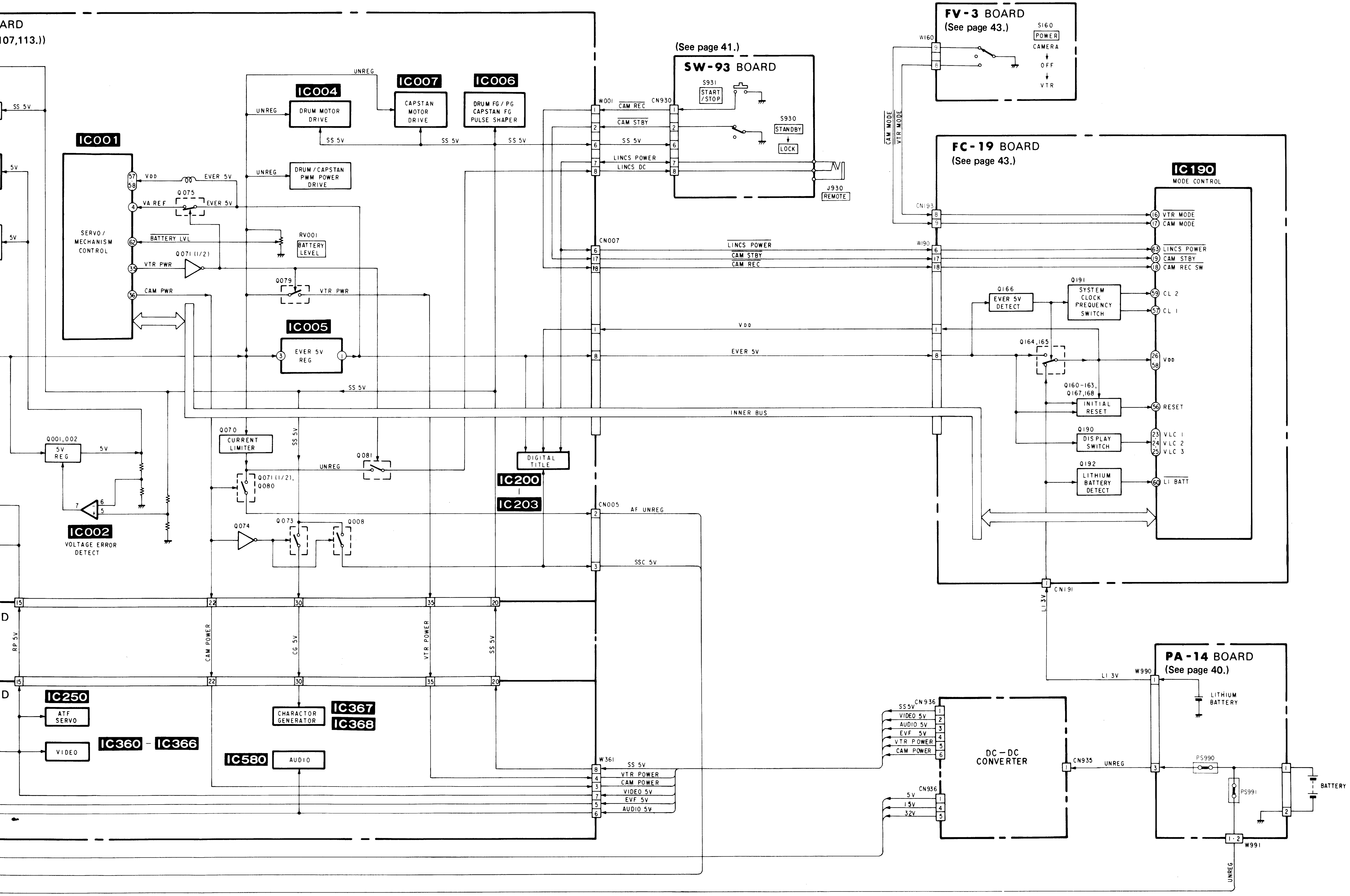

MC-29 BOARD
IC585
(See page 38.)
AUDIO 5V
MIC 5V
MIC IN
CN361
W585
CURRENT PROTECTOR
EXT Vcc
Vcc
MIC AMP
MIC +B
MIC IN
MIC
MIC UNIT
CN585
Q585
LOW-CUT FILTER
J691
MIC DC
J690
MIC
MJ-19 BOARD
(See page 38.)
MIC
LINE
REC/PB AUDIO
REC
MOA
PB
LIMITER
REC
AGC AMP
WEIGTING FILTER
AGC DET
DET
EMPHASIS-2
VCA
REC
PB
EMPHASIS-1
PB
MUTE
BUFFER
5dB AMP
Q552
AUDIO MUTE
Q553,Q554
LINE AMP
J360
AV IN (AUDIO)
J361
AV OUT (AUDIO)
SS-86 BOARD
((See page 113.))
SW-93 BOARD
(See page 41.)
EP OUT
EP OUT
FP134
W001
CN930
J931
EARPHONE
Q551
TIME CONSTANT SWITCH
CAM POWER
SP/LP
A MUTE
VA PB MODE
RF SWP
SERVO/SYSCON (SS-86)
FP134
8
6
4
32
30
27
29
26
41
22
19
29
21
17

3-6. POWER BLOCK DIAGRAM

- Number of page on the board shows schematic diagram.

(　　)mark : refer to this service manual.
((　　))mark : refer to CCD-F340E service manual.

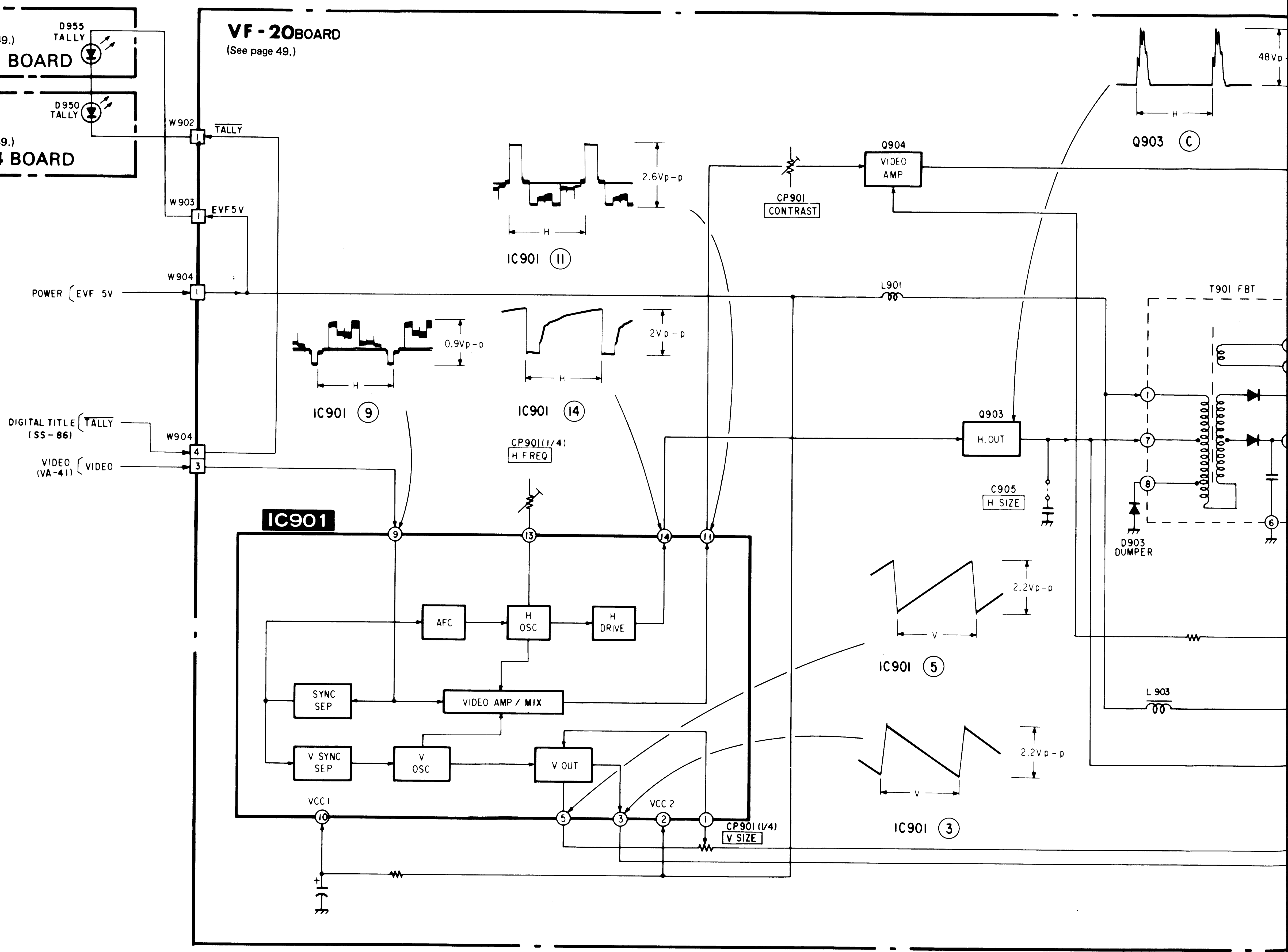

((See page 77,87.))
VC-38 BOARD
IC600
CCD IMAGER
CN600
2V
15V
32V
VL
IC850 - IC853
AUTO WHITE BALANCE
CN850
5V
W620
VC-39 BOARD
((See page 77.))
DT-71 BOARD
TIMING GENERATOR
5V(A)
5V(D)
V SUB DRIVE
IC621
SYNC GENERATOR
IC620
IRIS DRIVE
CN621
5V
15V
32V
5V(D)
5V(A)
5V(D)
VC-40 BOARD
((See page 79.))
MX-7 BOARD
MATRIX
PR-20 BOARD
PROCESS
IC701
ENCODER
CN701
5V
(See page 35.)
AF BOARD
IC4001
IC4002
AUTO FOCUS
IC4003
FOCUS MOTOR DRIVE
IC4004
ZOOM MOTOR DRIVE
CN4005
SS. C5V
UNREG
ELECTRONIC VIEW FINDER
(See page 49.)
VF-20 BOARD
IC901
CRT DRIVE
W904
EVF 5V
MJ-19 BOARD
(See page 38.)
J691
MIC DC
MC-29 BOARD
(See page 38.)
IC585
CURRENT PROTECTOR
MIC AMP
W585
MIC 5V
SP-53 BOARD
((See page 112.))
T REEL FG
S REEL FG
CC-7 BOARD
((See page 112.))
SS 5V
FP-118 BOARD
CAPSTAN FG
SS-86 BOARD
((See page 97,107,113.))
TAPE END/TOP SENSOR
IC003
LOADING MOTOR DRIVE
REEL FG LED
TAPE END SENS
LED DRIVE
IC001
SERVO/MECHANISM CONTROL
VDD
VA REF
Q075
BATTERY LVL
Q071 (1/2
VTR PWR
CAM PWR
CN006
UNREG
Q001,002
5V REG
IC301
REC/PB AMP
FLYING ERASE OSC
IC002
VOLTAGE ERROR DETECT
FP-134 BOARD
RP 5V
VA-41 BOARD
((See page 108.))
IC250
ATF SERVO
Q369, 370
CURRENT LIMITER
VIDEO
IC360 - IC366
J361
AV OUT (RF DC OUT)
CN360
EVF 5V
CN361
MIC 5V

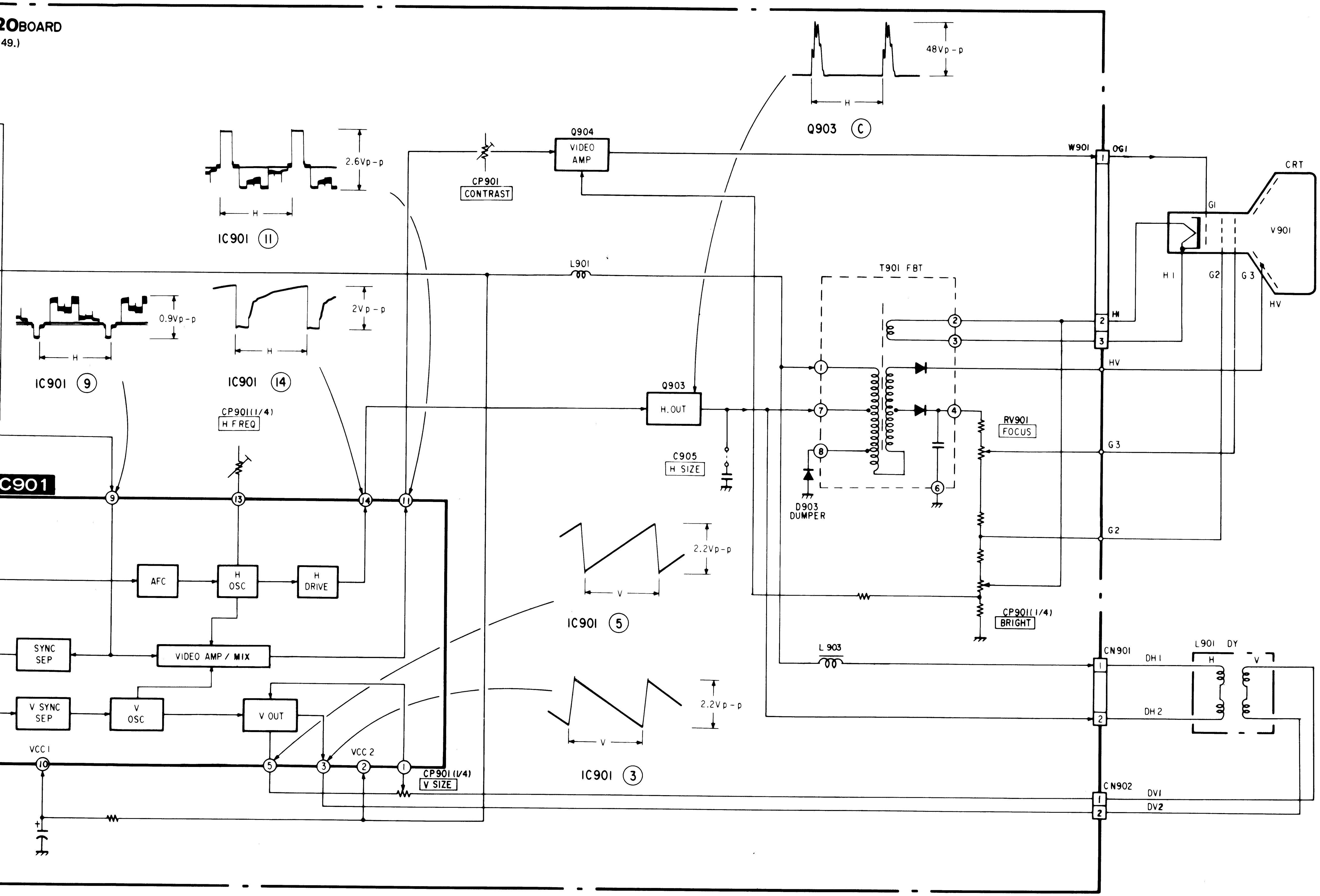

ARD
107,113.))
IC001
SERVO / MECHANISM CONTROL
VDD
EVER 5V
VA REF
Q075
BATTERY LVL
Q071 (1/2)
VTR PWR
CAM PWR
IC004
DRUM MOTOR DRIVE
IC007
CAPSTAN MOTOR DRIVE
IC006
DRUM FG / PG CAPSTAN FG PULSE SHAPER
DRUM / CAPSTAN PWM POWER DRIVE
UNREG
SS 5V
RV001
BATTERY LEVEL
Q079
IC005
EVER 5V REG
Q001,002
5V REG
IC002
VOLTAGE ERROR DETECT
Q070
CURRENT LIMITER
Q071 (1/2), Q080
Q081
Q074
Q073
Q008
DIGITAL TITLE
IC200
IC203
INNER BUS
W001
CN007
CN005
AF UNREG
SSC 5V
RP 5V
CAM POWER
CG 5V
VTR POWER
SS 5V
IC250
ATF SERVO
VIDEO
IC360 - IC366
CHARACTOR GENERATOR
IC367
IC368
IC580
AUDIO
W361
VTR POWER
CAM POWER
VIDEO 5V
EVF 5V
AUDIO 5V
(See page 41.)
SW-93 BOARD
CN930
CAM REC
CAM STBY
LINCS POWER
LINCS DC
S931 START / STOP
S930 STANDBY LOCK
J930 REMOTE
FV-3 BOARD
(See page 43.)
W160
S160 POWER CAMERA OFF VTR
CAM MODE
VTR MODE
FC-19 BOARD
(See page 43.)
CN193
W190
IC190
MODE CONTROL
VTR MODE
CAM MODE
LINCS POWER
CAM STBY
CAM REC SW
Q166
EVER 5V DETECT
Q191
SYSTEM CLOCK FREQUENCY SWITCH
CL 2
CL 1
Q164,165
VDD
Q160-163, Q167,168
INITIAL RESET
RESET
Q190
DISPLAY SWITCH
VLC 1
VLC 2
VLC 3
Q192
LITHIUM BATTERY DETECT
LI BATT
CN191
LI 3V
PA-14 BOARD
(See page 40.)
W990
LITHIUM BATTERY
PS990
PS991
BATTERY
W991
UNREG
DC-DC CONVERTER
CN936
SS5V
VIDEO 5V
AUDIO 5V
EVF 5V
VTR POWER
CAM POWER
5V
15V
32V
CN935
UNREG

3-7. VIEWFINDER BLOCK DIAGRAM

- Number of page on the board shows schematic diagram.

( )mark : refer to this service manual.
(( ))mark : refer to CCD-F340E service manual.


(See page 49.)
D955
TALLY
TL-21 BOARD
D950
TALLY
(See page 49.)
TL-24 BOARD
VF-20BOARD
(See page 49.)
W902
TALLY
W903
EVF5V
W904
POWER
EVF 5V
DIGITAL TITLE
TALLY
(SS-86)
VIDEO
(VA-41)
VIDEO
W904
4
3
2.6Vp-p
H
IC901 ⑪
0.9Vp-p
H
IC901 ⑨
2Vp-p
H
IC901 ⑭
CP901(1/4)
H FREQ
CP901
CONTRAST
Q904
VIDEO AMP
48Vp
H
Q903 Ⓒ
L901
T901 FBT
Q903
H.OUT
C905
H SIZE
D903
DUMPER
2.2Vp-p
V
IC901 ⑤
L 903
2.2Vp-p
V
IC901 ③
IC901
AFC
H OSC
H DRIVE
SYNC SEP
VIDEO AMP / MIX
V SYNC SEP
V OSC
V OUT
VCC 1
VCC 2
CP901 (1/4)
V SIZE


20BOARD
49.)
IC901 ⑪
2.6Vp-p
H
IC901 ⑨
0.9Vp-p
IC901 ⑭
2Vp-p
CP901
CONTRAST
Q904
VIDEO AMP
Q903 Ⓒ
48Vp-p
L901
T901 FBT
W901
OG1
CRT
G1
V901
H1
G2
G3
HV
CP901(1/4)
H FREQ
Q903
H.OUT
C905
H SIZE
D903
DUMPER
RV901
FOCUS
CP901(1/4)
BRIGHT
IC901
AFC
H OSC
H DRIVE
SYNC SEP
VIDEO AMP / MIX
V SYNC SEP
V OSC
V OUT
VCC1
VCC2
CP901(1/4)
V SIZE
IC901 ⑤
2.2Vp-p
V
IC901 ③
L903
CN901
DH1
DH2
L901 DY
CN902
DV1
DV2

SECTION 4
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

4-1. FRAME SCHEMATIC DIAGRAM

NOTE

THIS NOTES IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

● For printed wiring boards.

- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the conductor side.
- ⊗ : Through hole.
- ▨ : Pattern from the side which enables seeing.
- ■ : Pattern of the rear side. *

* Indicated by the color red.

Caution:
Pattern face side: Parts on the pattern face side seen from (Conductor Side) the pattern face are indicated.
Parts face side: Parts on the parts face side seen from (Component Side) the parts face are indicated. *

● For schematic diagram

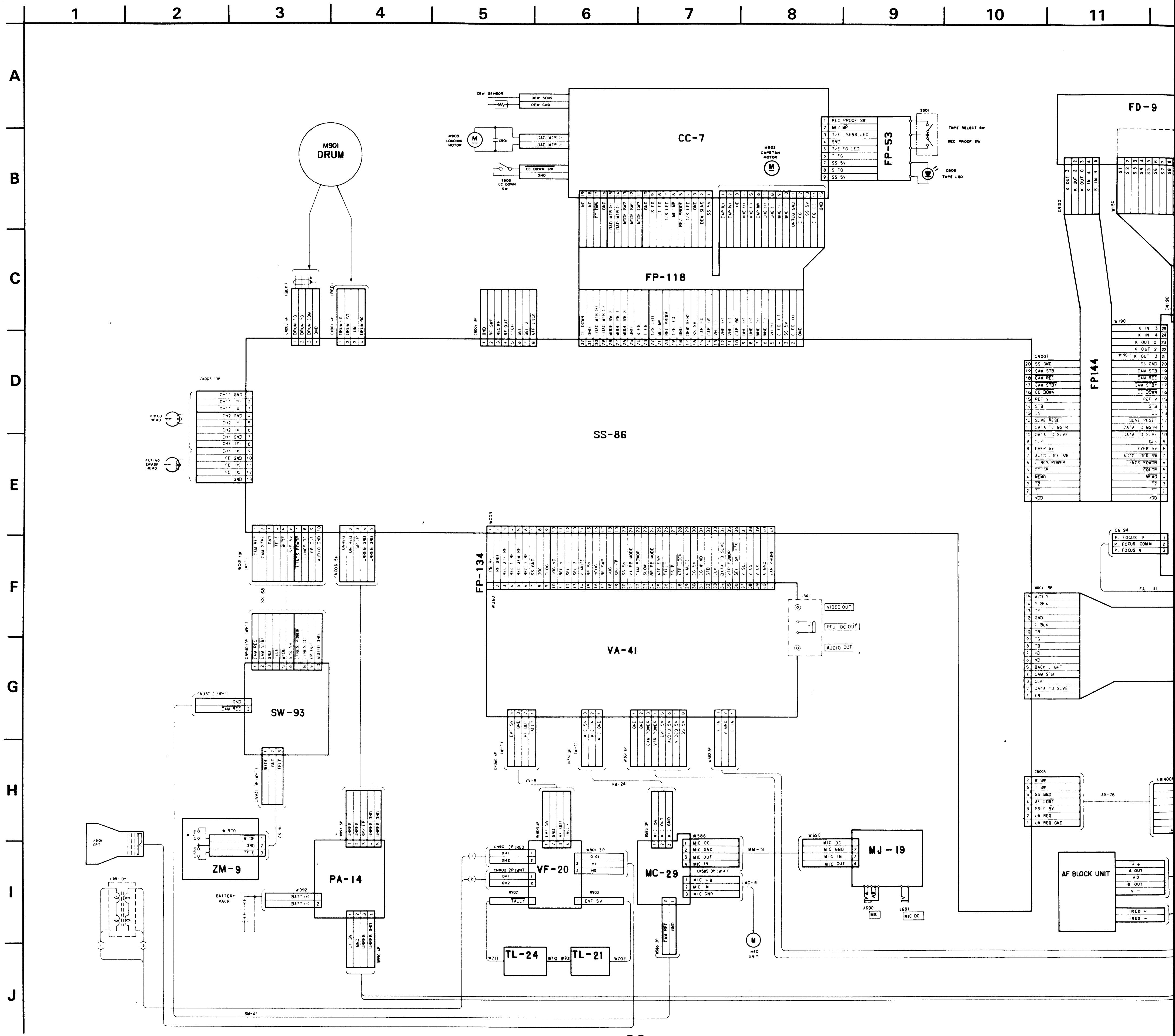
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/10W unless otherwise noted.
- Chip resistor are 1/10W unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF : μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : nonflammable resistor.
- : fusible resistor.
- ☐ : panel designation.
- △ : internal component.
- ☐ : adjustment for repair. *
- ━━ : B + Line *
- ━ ━ ━ : B − Line.*
- ⇨ : IN/OUT direction of (+, −) B line.*
- ⁎ : selected to yield optimum performance.*
- Circled numbers refer to waveforms.*
- Voltages are dc between ground and measurement points.*
- Readings are taken with a color-bar signal input.*
- Readings are taken with a digital multimeter (DC10MΩ).*
- Voltage variations may be noted due to normal production tolerances.*

* Indicated by the color red.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

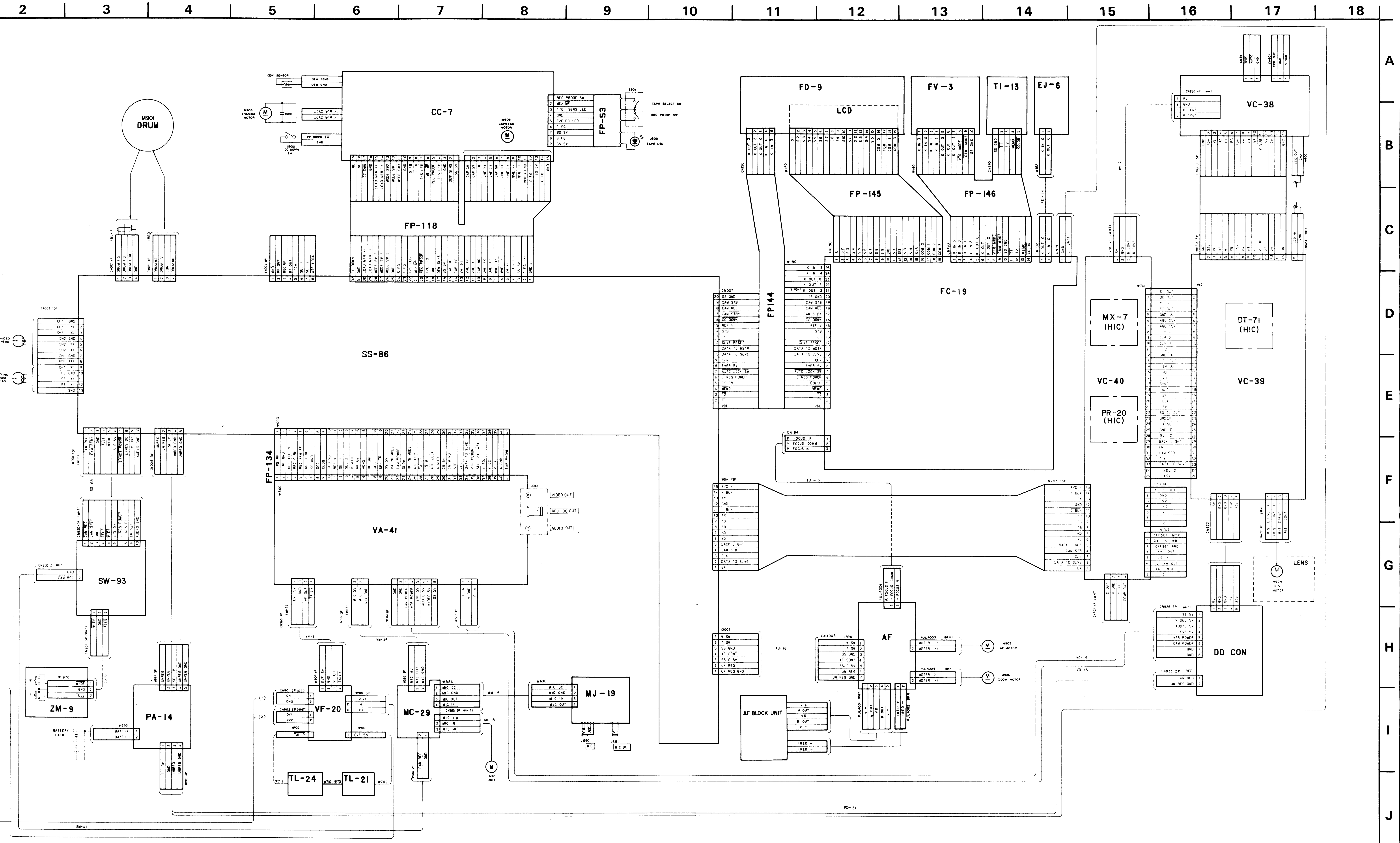
When indicating parts by reference number, please include the board name.

- Number of page on the board shows schematic diagram.
  ( )mark : refer to this service manual.
  (( ))mark : refer to CCD-F340E service manual.



FRAME FRAME

AM


2
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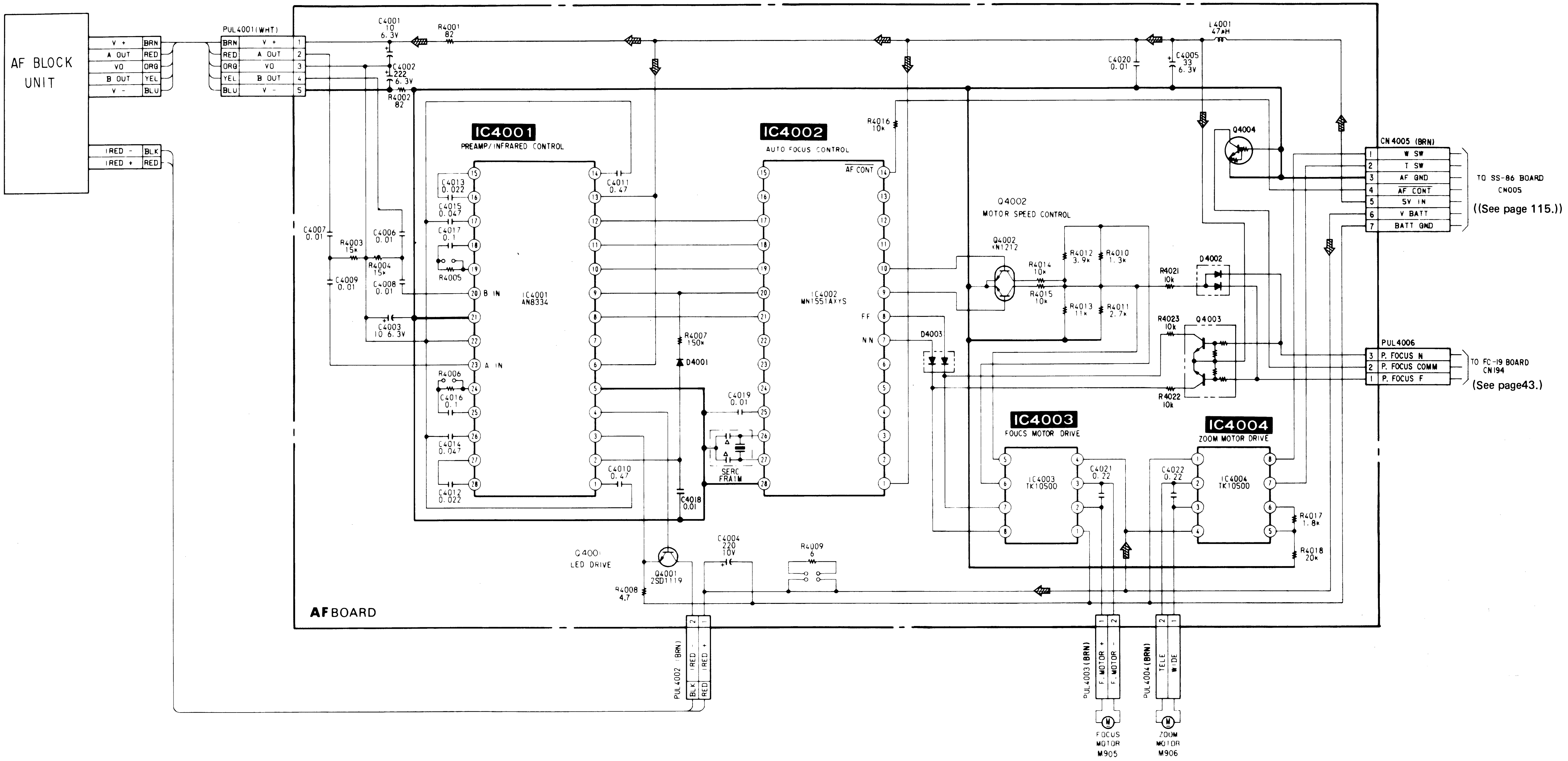
14
15
16
17
18
A
B
C
D
E
F
G
H
I
J
M901
DRUM
DEW SENSOR
M903
LOADING MOTOR
CC-7
M902
CAPSTAN MOTOR
FP-53
TAPE SELECT SW
REC PROOF SW
D302
TAPE LED
FP-118
SS-86
FP-134
VA-41
VIDEO OUT
RFU DC OUT
AUDIO OUT
SW-93
ZM-9
PA-14
BATTERY PACK
VF-20
TL-24
TL-21
MC-29
MIC UNIT
MJ-19
MIC
MIC DC
FD-9
LCD
FV-3
TI-13
EJ-6
FP-145
FP-146
FP144
FC-19
MX-7
(HIC)
VC-40
PR-20
(HIC)
VC-38
DT-71
(HIC)
VC-39
LENS
M904
IRIS MOTOR
DD CON
AF
M905
AF MOTOR
M906
ZOOM MOTOR
AF BLOCK UNIT
FA-31
AS-76
VD-15
VC-19
PD-21
SM-41
MM-51
VM-24
XV-8
VIDEO HEAD
FLYING ERASE HEAD

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM

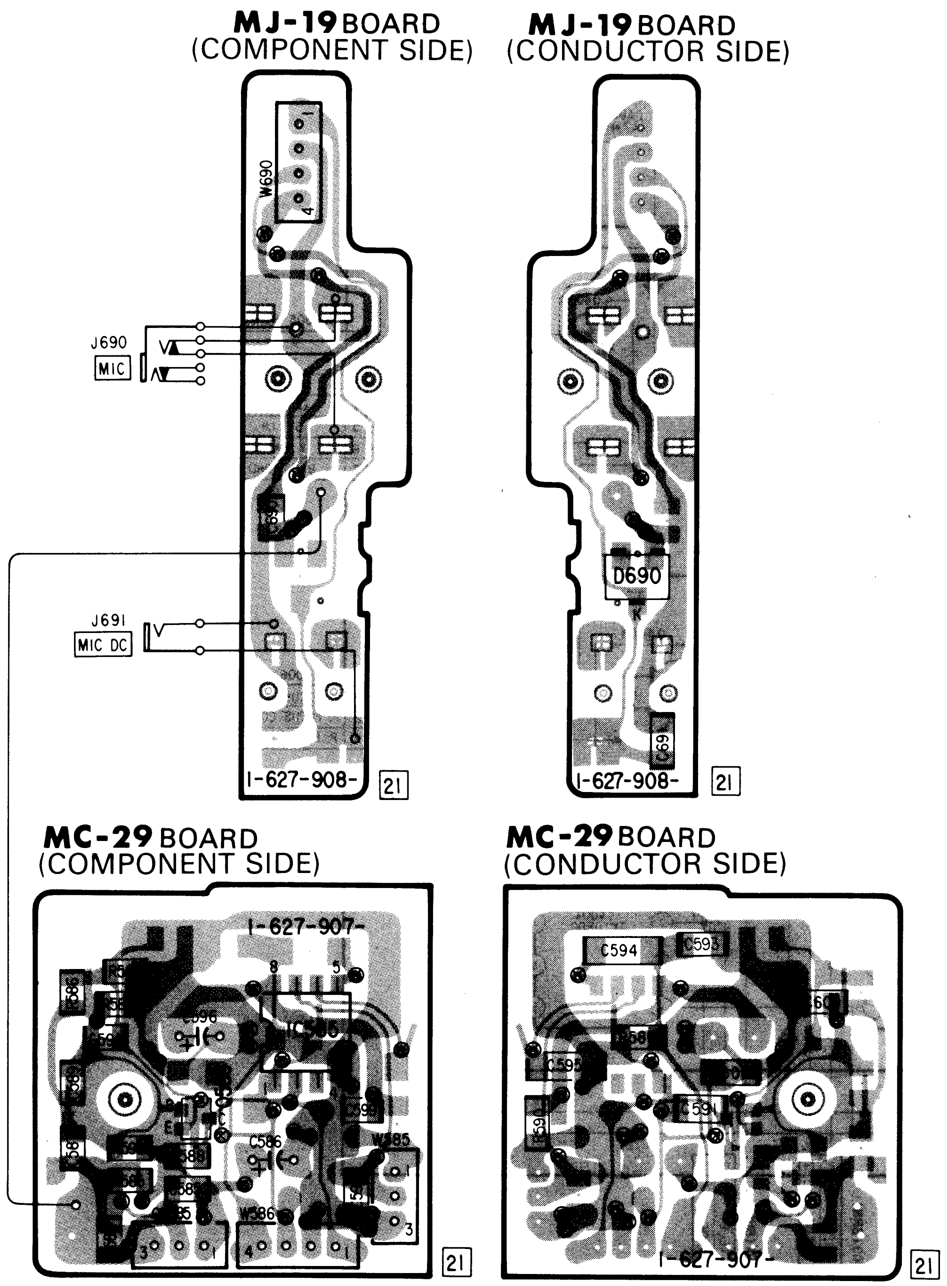
AF (Auto Focus) SCHEMATIC DIAGRAM

- AF BOARD is replaced as a block, so the PRINTED WIRING BOARD of it is omitted.


AF BLOCK UNIT
V +
A OUT
VO
B OUT
V -
BRN
RED
ORG
YEL
BLU
IRED -
IRED +
BLK
RED
PUL4001(WHT)
C4001 10 6.3V
R4001 82
C4002 222 6.3V
R4002 82
IC4001
PREAMP/INFRARED CONTROL
IC4001 AN8334
B IN
A IN
C4013 0.022
C4015 0.047
C4017 0.1
R4005
C4007 0.01
R4003 15k
C4006 0.01
R4004 15k
C4009 0.01
C4008 0.01
C4003 10 6.3V
R4006
C4016 0.1
C4014 0.047
C4012 0.022
C4011 0.47
C4010 0.47
R4007 150k
D4001
C4018 0.01
C4019 0.01
SERC FRAIM
IC4002
AUTO FOCUS CONTROL
IC4002 MN1551AXYS
AF CONT
FF
NN
R4016 10k
D4003
Q4001 LED DRIVE
Q4001 2SD1119
R4008 4.7
C4004 220 10V
R4009 6
AF BOARD
PUL4002 (BRN)
C4020 0.01
C4005 33 6.3V
L4001 47μH
Q4004
Q4002 MOTOR SPEED CONTROL
Q4002 XN1212
R4014 10k
R4015 10k
R4012 3.9k
R4010 1.3k
R4013 11k
R4011 2.7k
R4021 10k
D4002
R4023 10k
Q4003
R4022 10k
CN4005 (BRN)
1 W SW
2 T SW
3 AF GND
4 AF CONT
5 5V IN
6 V BATT
7 BATT GND
TO SS-86 BOARD CN005
((See page 115.))
PUL4006
3 P. FOCUS N
2 P. FOCUS COMM
1 P. FOCUS F
TO FC-19 BOARD CN194
(See page43.)
IC4003
FOUCS MOTOR DRIVE
IC4003 TK10500
C4021 0.22
IC4004
ZOOM MOTOR DRIVE
IC4004 TK10500
C4022 0.22
R4017 1.8k
R4018 20k
PUL4003 (BRN)
F. MOTOR +
F. MOTOR -
PUL4004 (BRN)
TELE
WIDE
FOCUS MOTOR M905
ZOOM MOTOR M906

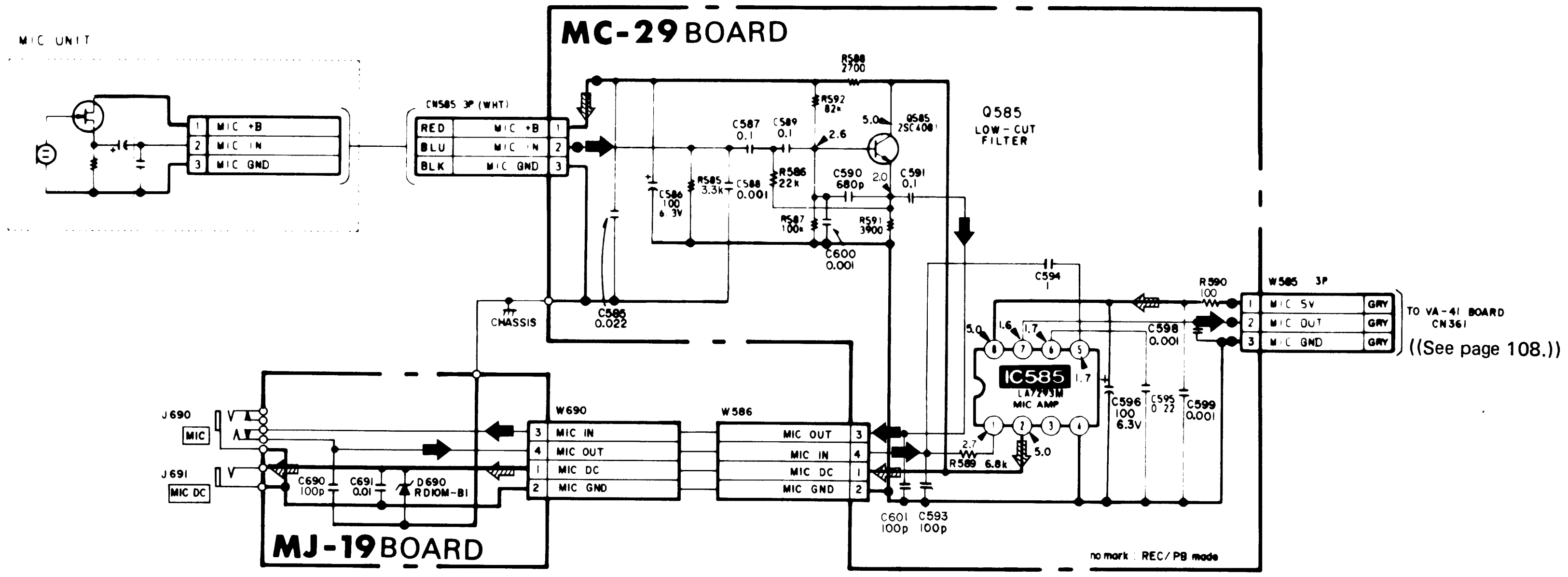
MC-29 (MIC AMP), MJ-19 (EXT MIC JACK) PRINTED WIRING BOARDS

—Ref. No. MC-29 and MJ-19 BOARDS: 4,000 series—


MJ-19 BOARD (COMPONENT SIDE)
MJ-19 BOARD (CONDUCTOR SIDE)
W690
J690
MIC
J691
MIC DC
D690
1-627-908-
21
MC-29 BOARD (COMPONENT SIDE)
MC-29 BOARD (CONDUCTOR SIDE)
1-627-907-
IC585
C586
C596
W585
W586
C594
C593
21

MC-29 (MIC AMP), MJ-19 (EXT MIC JACK) SCHEMATIC DIAGRAM

—Ref. No. MC-29 and MJ-19 BOARDS: 4,000 series—

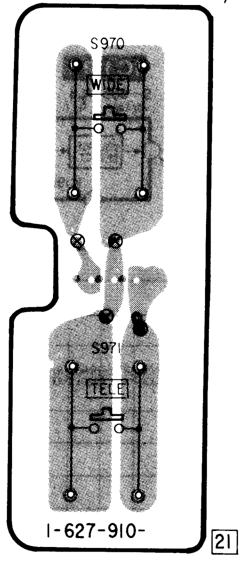

MIC UNIT
1 MIC +B
2 MIC IN
3 MIC GND
CN585 3P (WHT)
RED MIC +B 1
BLU MIC IN 2
BLK MIC GND 3
MC-29 BOARD
R588 2700
R592 82k
C587 0.1
C589 0.1
2.6
5.0
Q585 2SC4081
C586 100 6.3V
R585 3.3k
C588 0.001
R586 22k
C590 680p
2.0
C591 0.1
R587 100k
R591 3900
C600 0.001
Q585 LOW-CUT FILTER
CHASSIS
C585 0.022
C594 1
R590 100
W585 3P
1 MIC 5V GRY
2 MIC OUT GRY
3 MIC GND GRY
TO VA-41 BOARD CN361
((See page 108.))
5.0
1.6
1.7
1.7
C598 0.001
IC585 LA7293M MIC AMP
C596 100 6.3V
C595 0.22
C599 0.001
2.7
R589 6.8k
5.0
J690
MIC
J691
MIC DC
W690
3 MIC IN
4 MIC OUT
1 MIC DC
2 MIC GND
C690 100p
C691 0.01
D690 RD10M-B1
W586
MIC OUT 3
MIC IN 4
MIC DC 1
MIC GND 2
C601 100p
C593 100p
MJ-19 BOARD
no mark : REC/PB mode

- **Signal path**

➡ : REC AUDIO Signal

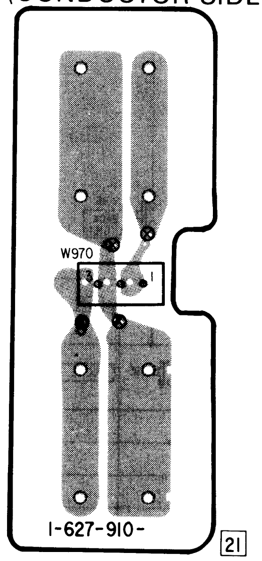
PA-14 (POWER), SW-93 (START/STOP SWITCH, STANDBY SWITCH, IN/OUT JACK), ZM-9 (ZOOM SWITCH) PRINTED WIRING BOARDS

—Ref. No. SW-93 and ZM-9 BOARDS: 5,000 series, PA-14 BOARD: 6,000 series—



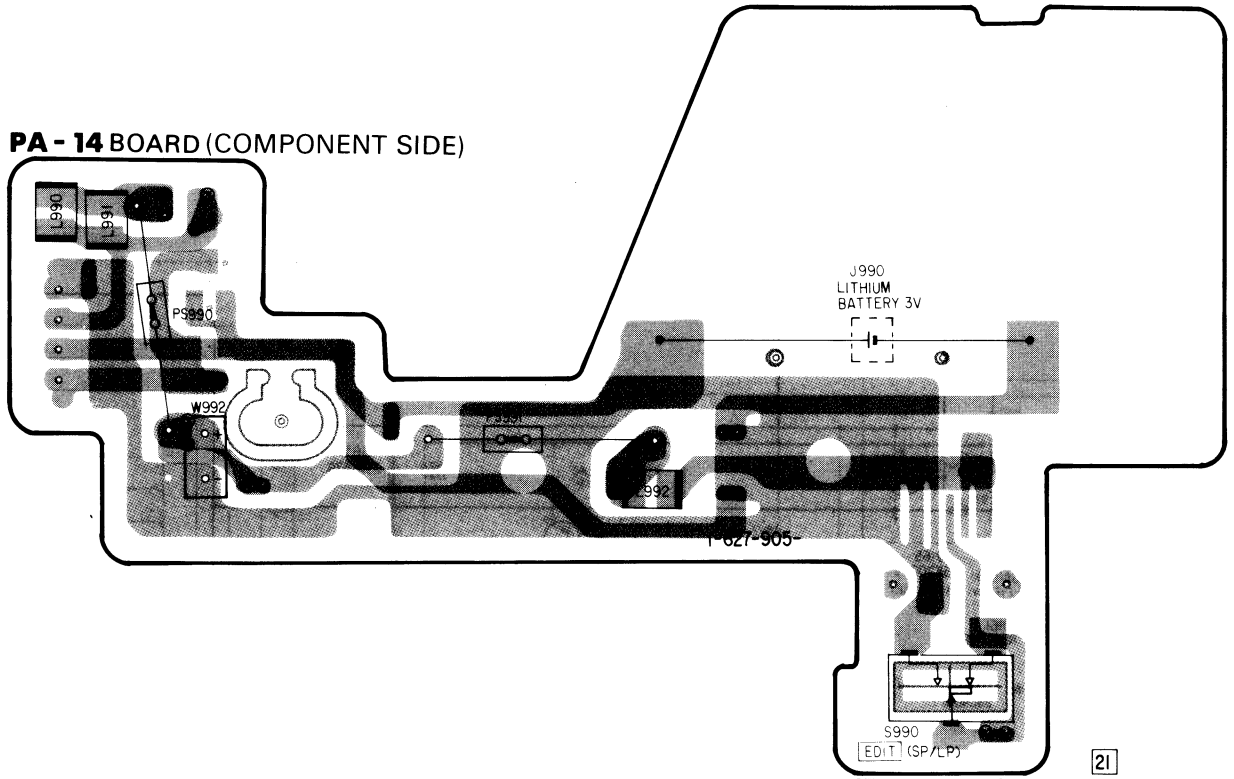
ZM-9 BOARD (COMPONENT SIDE)

S970
WIDE
S971
TELE
1-627-910-
21



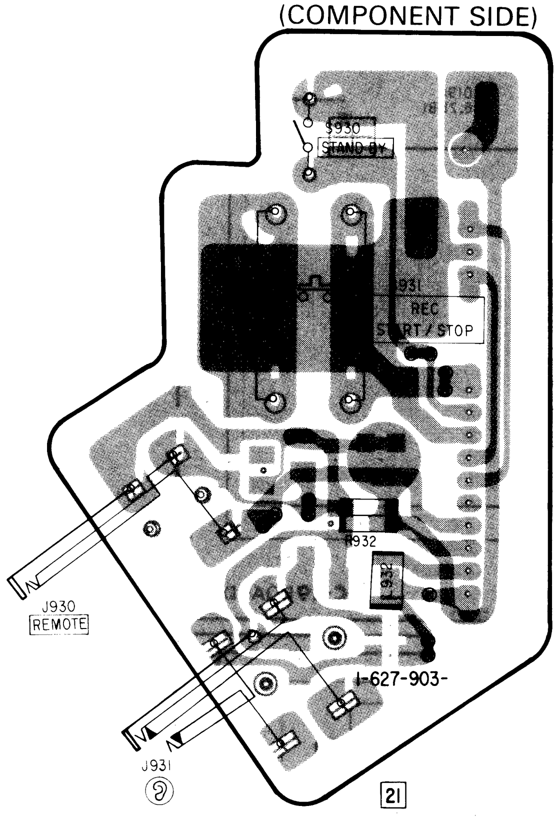
ZM-9 BOARD (CONDUCTOR SIDE)

W970
1-627-910-
21



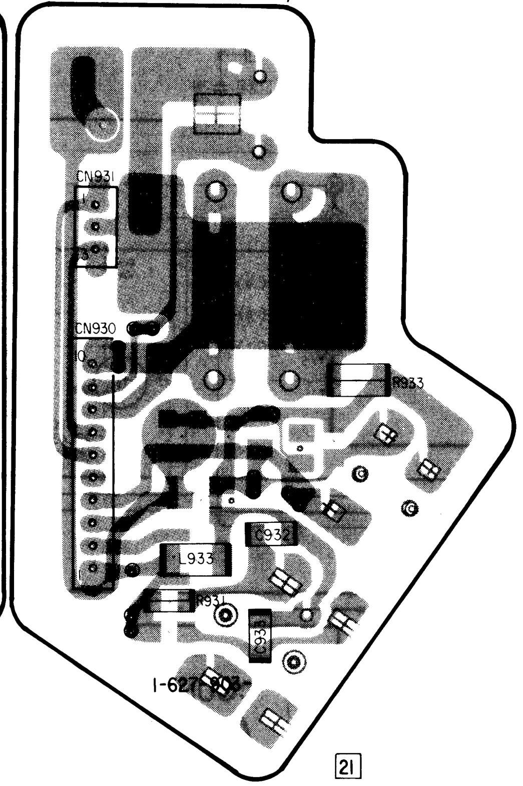
PA-14 BOARD (COMPONENT SIDE)

L990
L991
PS990
W992
J990
LITHIUM
BATTERY 3V
PS991
L992
1-627-905-
S990
EDIT (SP/LP)
21



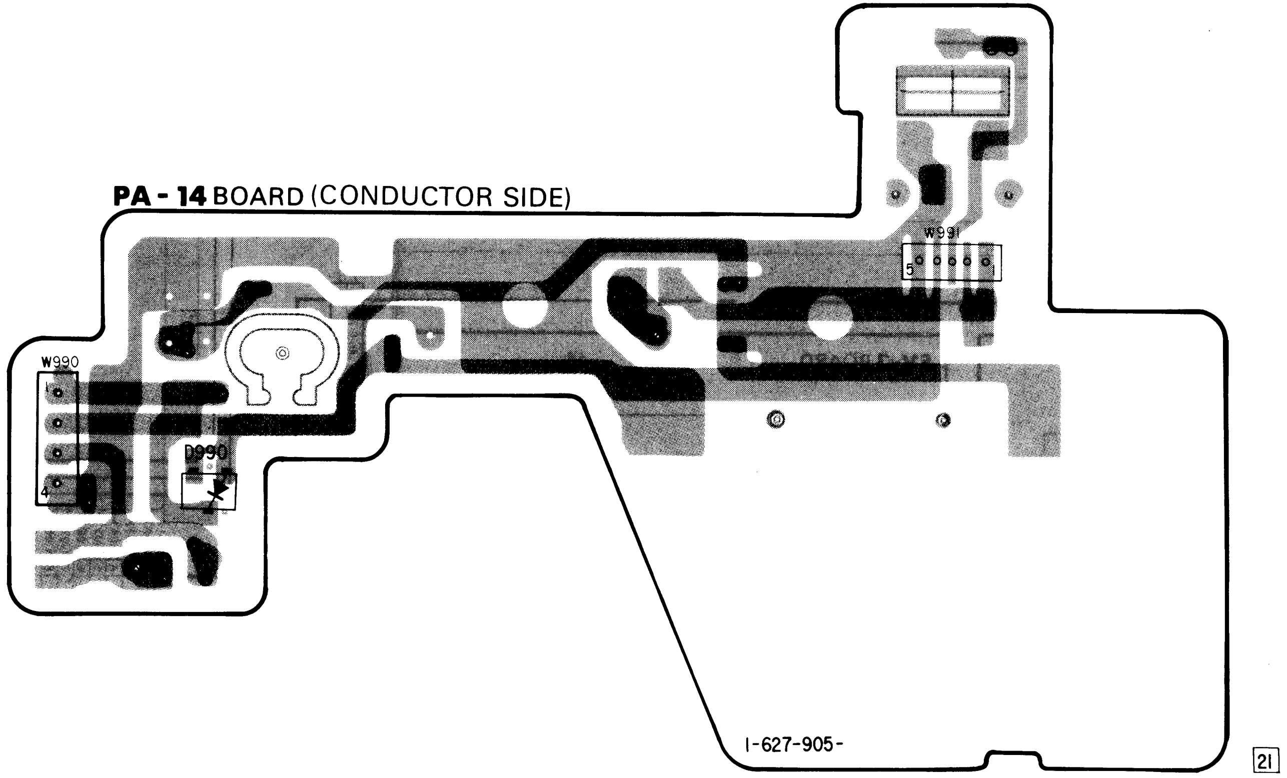
SW-93 BOARD (COMPONENT SIDE)

S930
STAND BY
S931
REC
START/STOP
R932
J930
REMOTE
J931
1-627-903-
21



SW-93 BOARD (CONDUCTOR SIDE)

CN931
CN930
R933
L933
C932
R931
1-627-903-
21

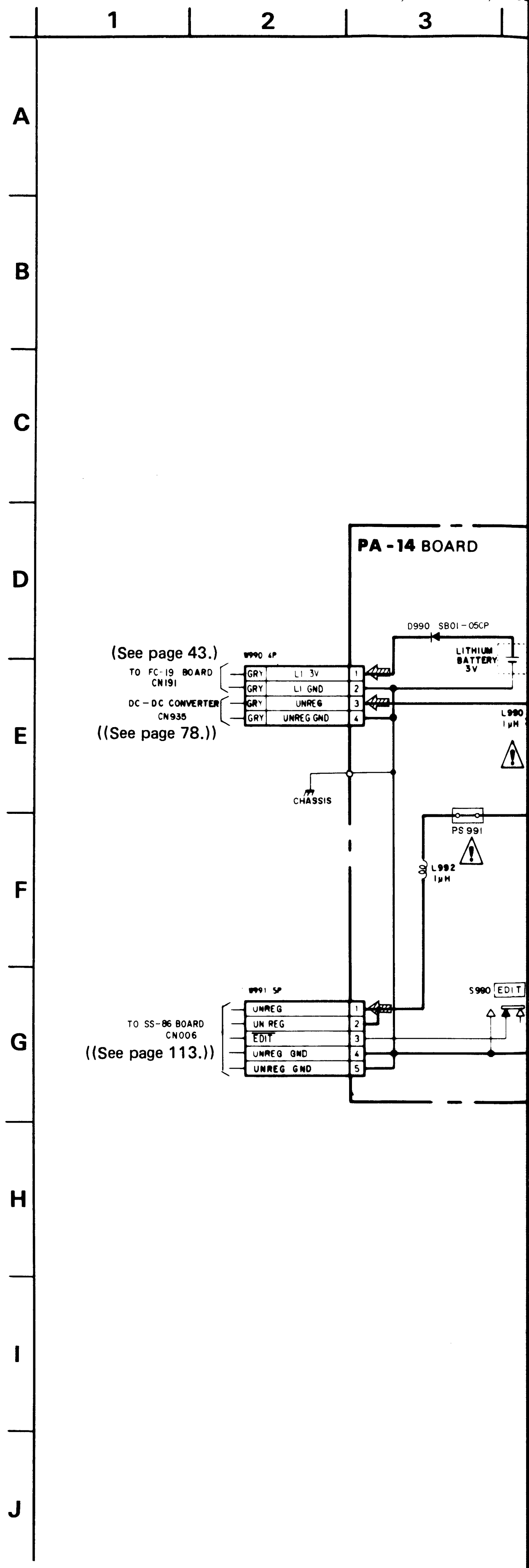


PA-14 BOARD (CONDUCTOR SIDE)

W991
W990
D990
1-627-905-
21

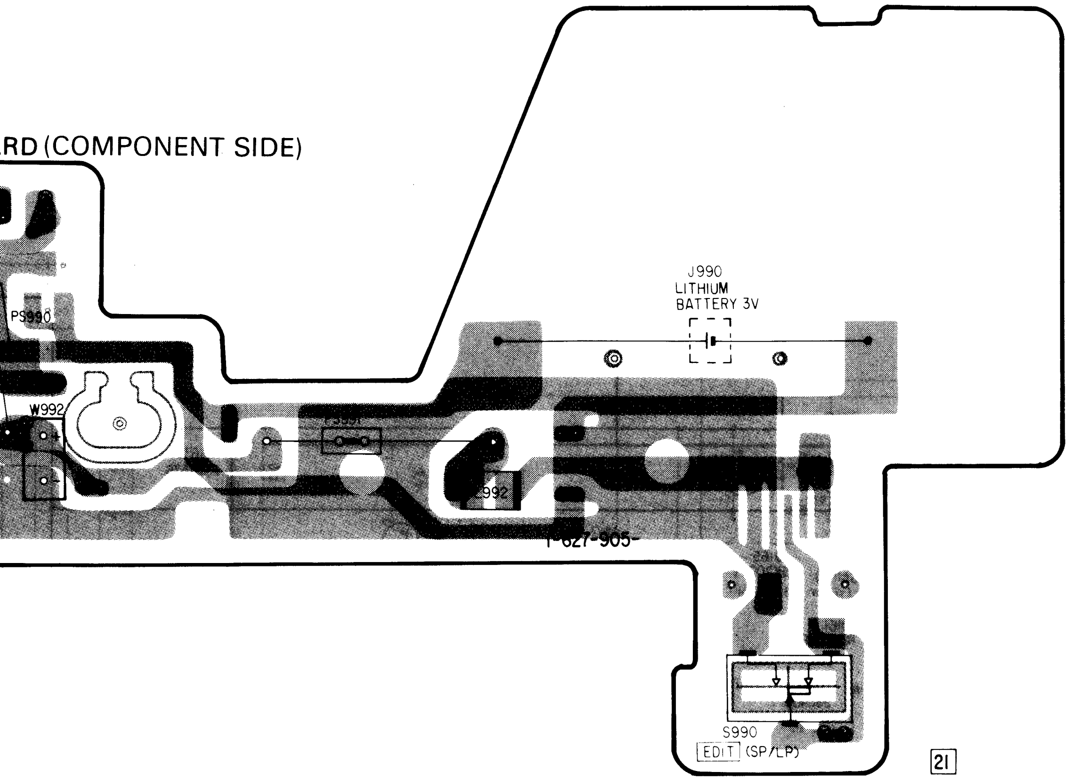
PA-14 (POWER), SW-93 (START/STOP SWITCH

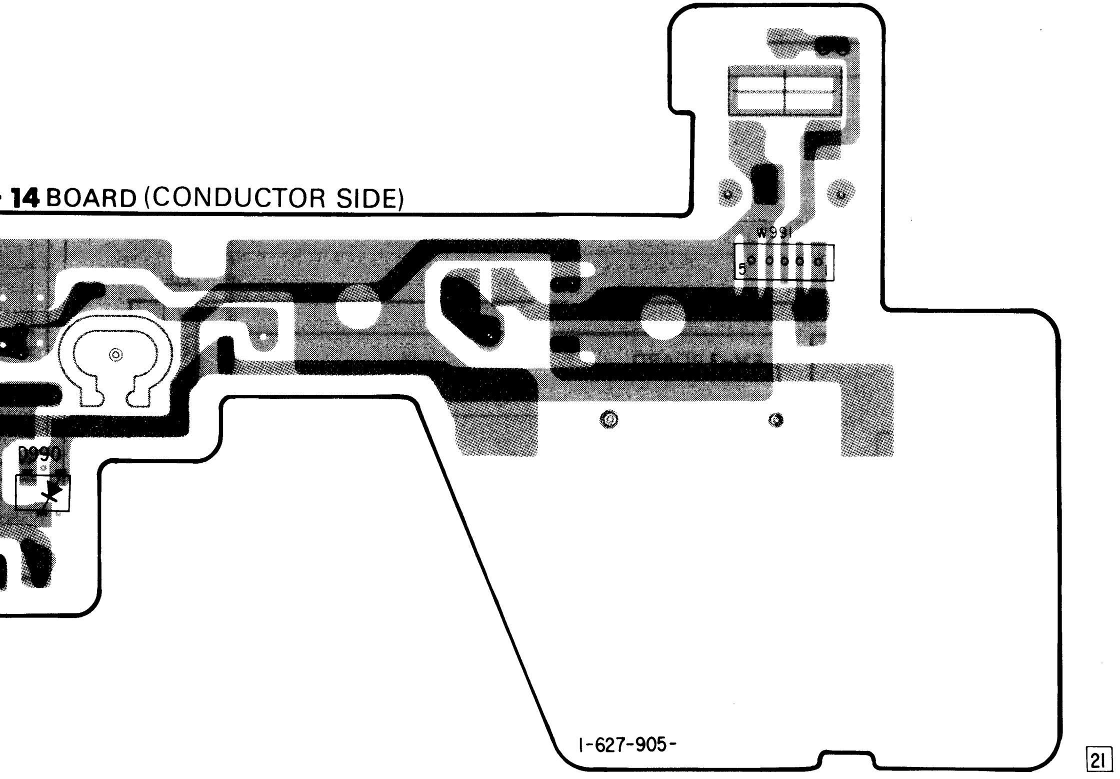
—Ref. No. SW-93 and ZM-9 BOARDS: 5,000 series, PA



1
2
3
A
B
C
D
E
F
G
H
I
J
PA-14 BOARD
D990 SB01-05CP
LITHIUM BATTERY 3V
(See page 43.)
W990 4P
TO FC-19 BOARD CN191
DC-DC CONVERTER CN935
((See page 78.))
GRY
L1 3V
L1 GND
UNREG
UNREG GND
1
2
3
4
L990 1µH
CHASSIS
PS991
L992 1µH
S990 EDIT
W991 5P
TO SS-86 BOARD CN006
((See page 113.))
UNREG
UN REG
EDIT
UNREG GND
UNREG GND
5

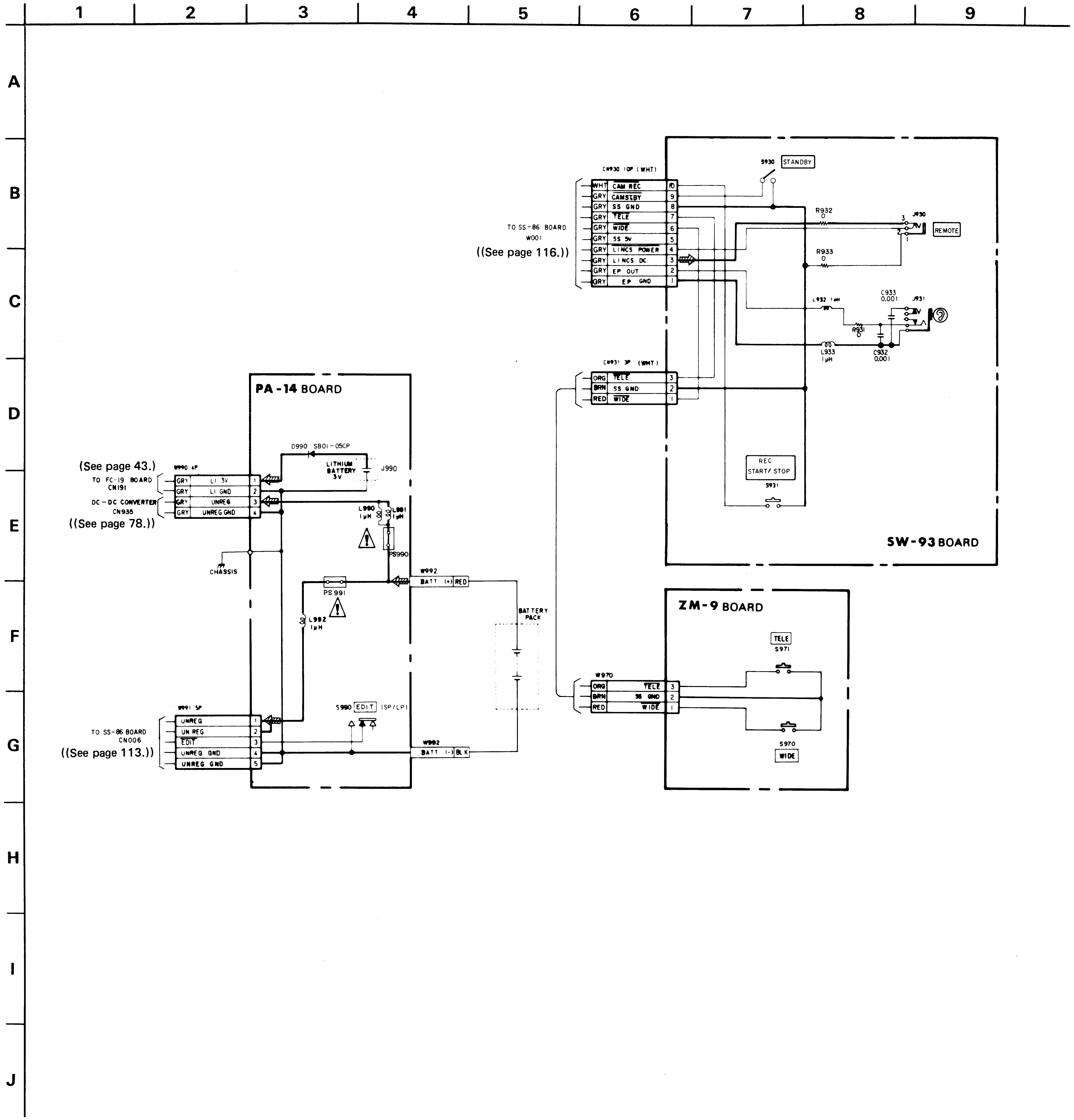
M SWITCH) PRINTED WIRING BOARDS


RD (COMPONENT SIDE)
J990
LITHIUM
BATTERY 3V
PS990
W992
S992
1-627-905-
S990
EDIT (SP/LP)
21


- 14 BOARD (CONDUCTOR SIDE)
W991
D990
1-627-905-
21

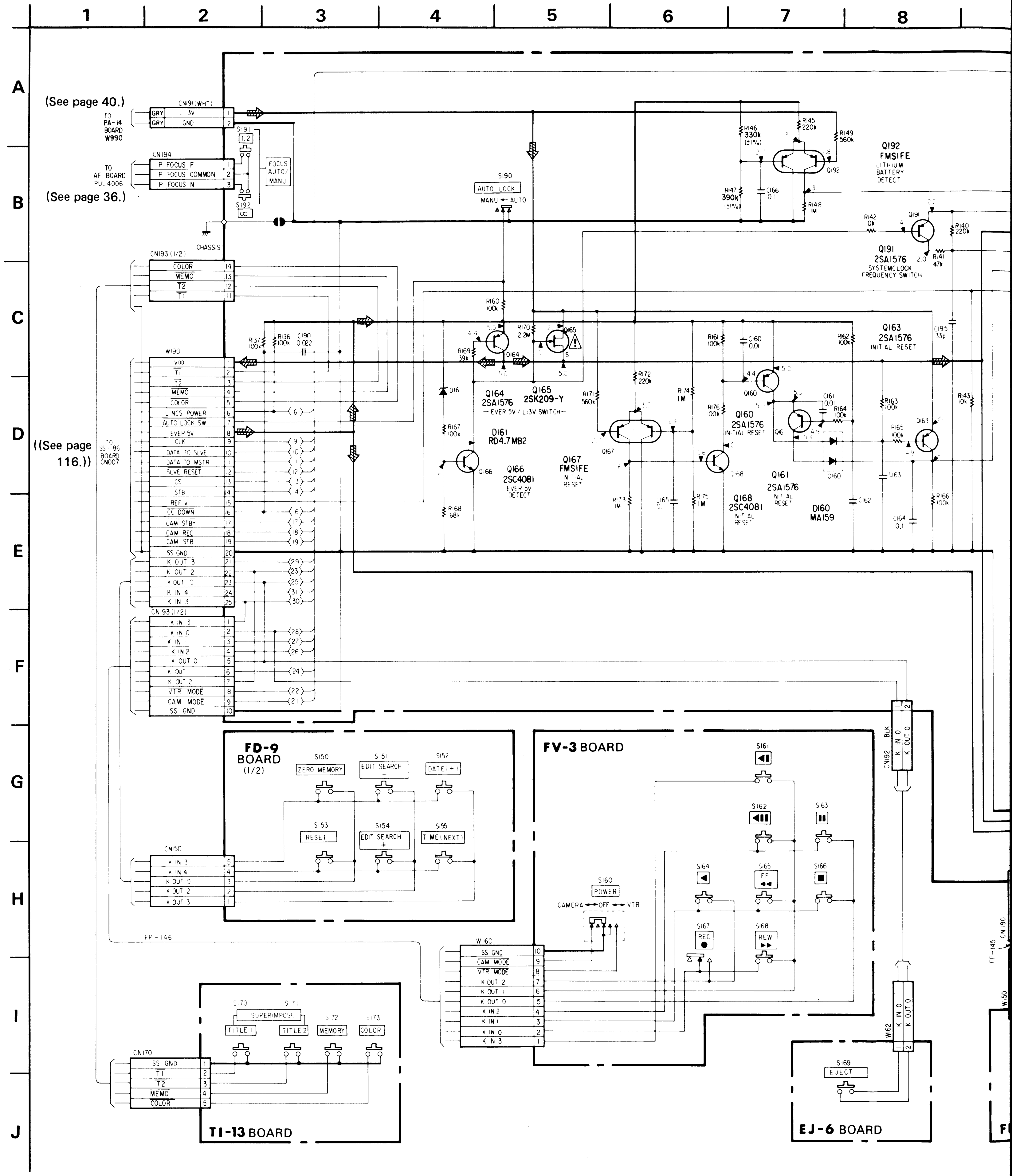
PA-14 (POWER), SW-93 (START/STOP SWITCH, STANDBY SWITCH, IN/OUT JACK), ZM-9 (ZOOM SWITCH) SCHEMATIC DIAGRAM

—Ref. No. SW-93 and ZM-9 BOARDS: 5,000 series, PA-14 BOARD: 6,000 series—


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
I
J
PA-14 BOARD
(See page 43.)
W990 4P
TO FC-19 BOARD CN191
GRY LI 3V 1
GRY LI GND 2
DC-DC CONVERTER CN935
GRY UNREG 3
GRY UNREG GND 4
((See page 78.))
D990 SB01-05CP
LITHIUM BATTERY 3V
J990
L990 1μH
L991 1μH
PS990
CHASSIS
W992
BATT (+) RED
PS991
L992 1μH
BATTERY PACK
W991 5P
TO SS-86 BOARD CN006
((See page 113.))
UNREG 1
UN REG 2
EDIT 3
UNREG GND 4
UNREG GND 5
S990 EDIT (SP/LP)
W992
BATT (-) BLK
CN930 10P (WHT)
TO SS-86 BOARD W001
((See page 116.))
WHT CAM REC 10
GRY CAMSTBY 9
GRY SS GND 8
GRY TELE 7
GRY WIDE 6
GRY SS 5V 5
GRY LINCS POWER 4
GRY LINCS DC 3
GRY EP OUT 2
GRY EP GND 1
S930 STANDBY
R932 0
J930
REMOTE
R933 0
L932 1μH
C933 0.001
J931
R931 0
L933 1μH
C932 0.001
CN931 3P (WHT)
ORG TELE 3
BRN SS GND 2
RED WIDE 1
REC START/STOP
S931
SW-93 BOARD
ZM-9 BOARD
TELE
S971
W970
ORG TELE 3
BRN SS GND 2
RED WIDE 1
S970
WIDE

FC-19 (MODE CONTROL), FV-3 (POWER SWITCH, VTR FUNCTION SWITCH), FD-9 (CAMERA FUNCTION SWITCH), EJ-6 (EJE

—Ref. No. FC-19, FV-3, FD-9, EJ-6 and TI-13 BOARDS : 4,000 series—


1
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G
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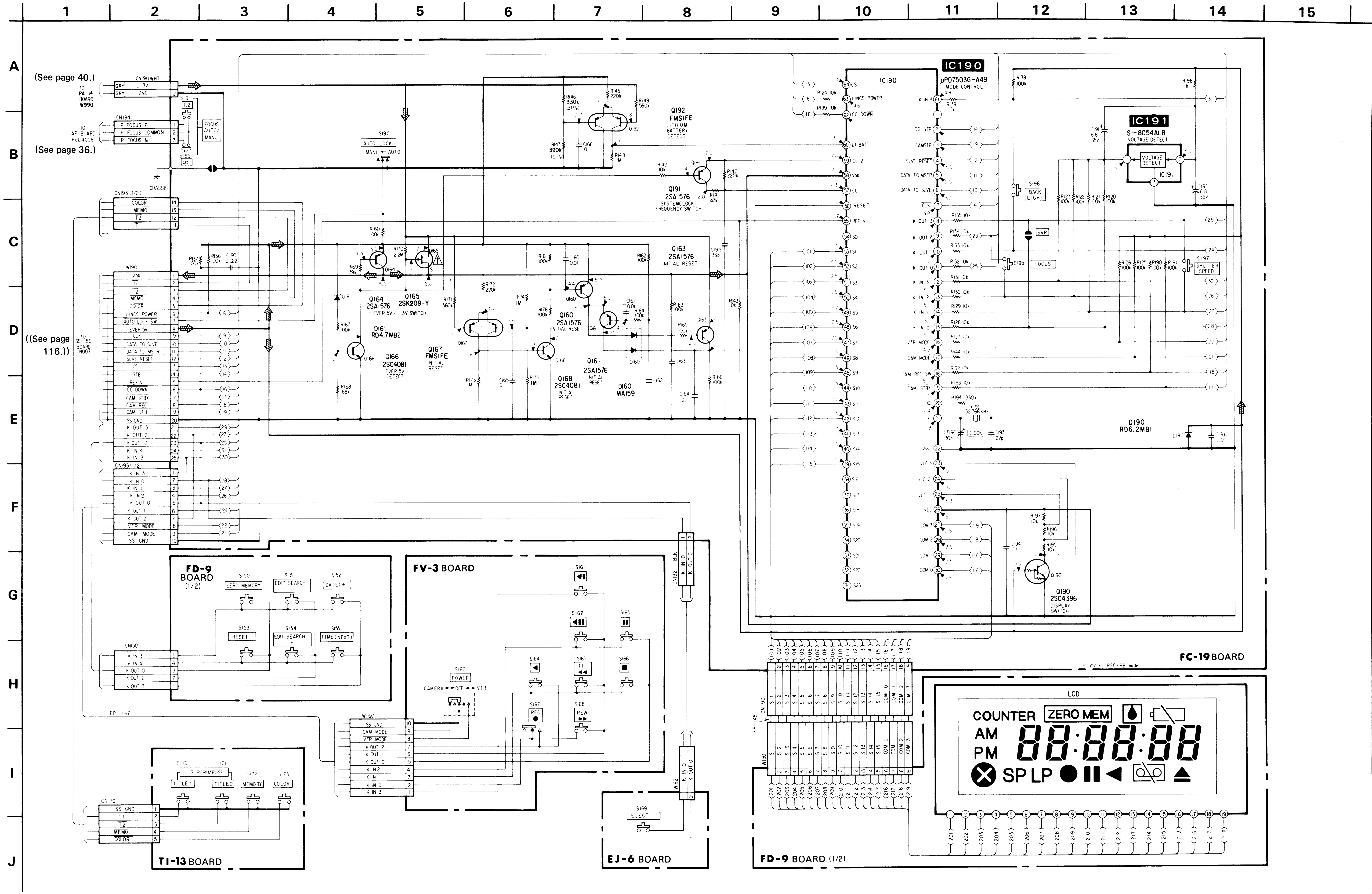
J
(See page 40.)
TO PA-14 BOARD W990
CN191 (WHT)
GRY L1 3V
GRY GND
CN194
P FOCUS F
P FOCUS COMMON
P FOCUS N
TO AF BOARD PUL4006
(See page 36.)
S191
S192
FOCUS AUTO/MANU
CHASSIS
S190
AUTO LOCK
MANU ←→ AUTO
CN193 (1/2)
COLOR
MEMO
T2
T1
W190
VDD
T1
T2
MEMO
COLOR
LINES POWER
AUTO LOCK SW
EVER 5V
CLK
DATA TO SLVE
DATA TO MSTR
SLVE RESET
CS
STB
REF V
CC DOWN
CAM STBY
CAM REC
CAM STB
SS GND
K OUT 3
K OUT 2
K OUT 0
K IN 4
K IN 3
((See page 116.))
TO SS-86 BOARD CN007
K IN 3
K IN 0
K IN 1
K IN 2
K OUT 0
K OUT 1
K OUT 2
VTR MODE
CAM MODE
SS GND
R137 100k
R136 100k
C190 0.022
R160 100k
R169 39k
R170 2.2M
Q164 2SA1576
Q165 2SK209-Y
—EVER 5V / L-3V SWITCH—
D161 RD4.7MB2
R167 100k
R168 68k
Q166 2SC4081 EVER 5V DETECT
Q167 FMS1FE INITIAL RESET
R171 560k
R172 220k
R173 1M
R174 1M
R175 1M
R176 100k
R161 100k
C160 0.01
Q160 2SA1576 INITIAL RESET
Q168 2SC4081 INITIAL RESET
Q161 2SA1576 INITIAL RESET
C161 0.01
R164 100k
R165 100k
D160 MA159
C162
C163
C164 0.1
R162 100k
R163 100k
R166 100k
Q163 2SA1576 INITIAL RESET
C195 33p
R143 10k
R146 330k (±1%)
R145 220k
R149 560k
R147 390k (±1%)
C166 0.1
R148 1M
Q192 FMS1FE LITHIUM BATTERY DETECT
R142 10k
Q191 2SA1576 SYSTEMCLOCK FREQUENCY SWITCH
R140 220k
R141 47k
FD-9 BOARD (1/2)
S150 ZERO MEMORY
S151 EDIT SEARCH −
S152 DATE(+1)
S153 RESET
S154 EDIT SEARCH +
S155 TIME(NEXT)
CN150
K IN 3
K IN 4
K OUT 0
K OUT 2
K OUT 3
FP-146
FV-3 BOARD
S160 POWER
CAMERA ←→ OFF ←→ VTR
S161
S162
S163
S164
S165 FF
S166
S167 REC
S168 REW
W160
SS GND
CAM MODE
VTR MODE
K OUT 2
K OUT 1
K OUT 0
K IN 2
K IN 1
K IN 0
K IN 3
CN192 BLK K IN 0 K OUT 0
W162 K IN 0 K OUT 0
S169 EJECT
EJ-6 BOARD
CN170
SS GND
T1
T2
MEMO
COLOR
S170 S171 SUPERIMPOSE
TITLE 1
TITLE 2
S172 MEMORY
S173 COLOR
TI-13 BOARD
CN190
FP-145
W150

MODE CONTROL MODE CONTROL

FC-19 (MODE CONTROL), FV-3 (POWER SWITCH, VTR FUNCTION SWITCH), FD-9 (CAMERA FUNCTION SWITCH), EJ-6 (EJECT SWITCH), TI-13 (DIGITAL TITLER SWITCH) SCHEMATIC DIAGRAM

—Ref. No. FC-19, FV-3, FD-9, EJ-6 and TI-13 BOARDS: 4,000 series—


1
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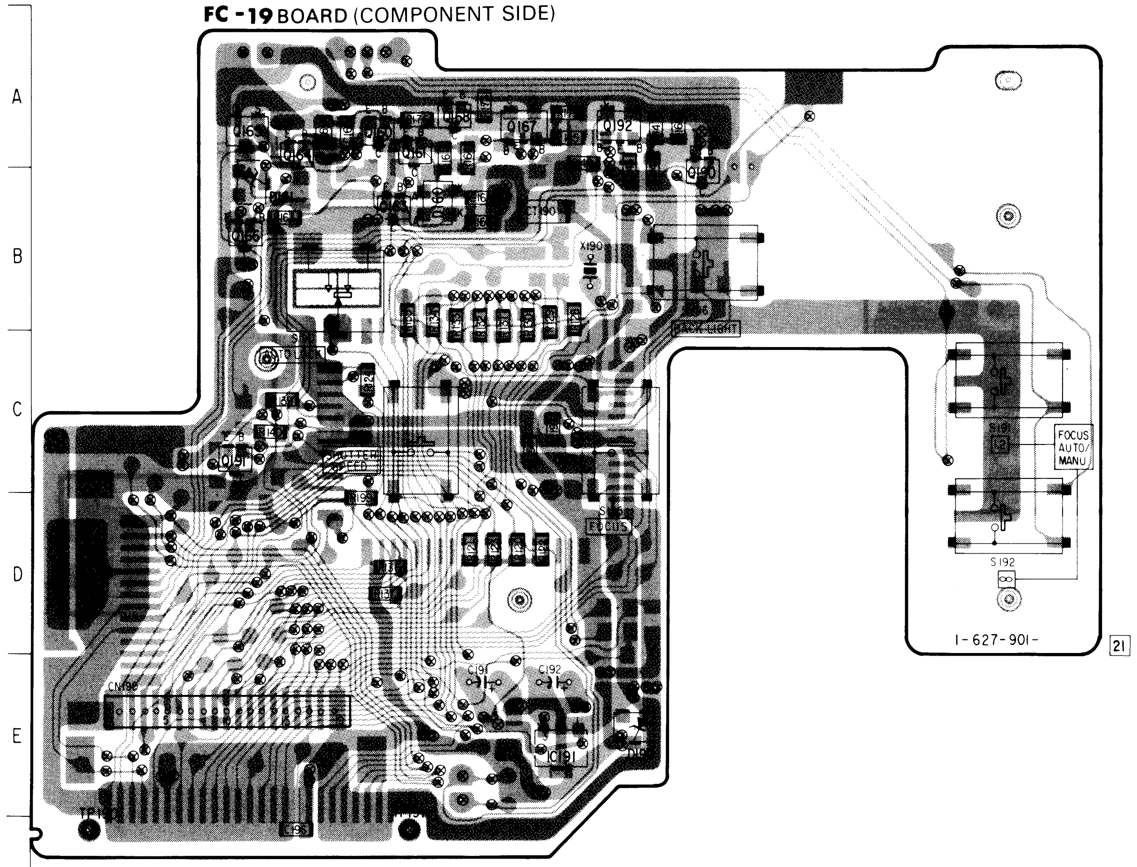
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
(See page 40.)
TO PA-14 BOARD W990
CN191 (WHT)
L1 3V
GND
TO AF BOARD PUL4006
CN194
P FOCUS F
P FOCUS COMMON
P FOCUS N
(See page 36.)
S191
S192
FOCUS AUTO/MANU
CHASSIS
CN193 (1/2)
COLOR
MEMO
T2
T1
W190
VDD
LINCS POWER
AUTO LOCK SW
EVER 5V
CLK
DATA TO SLVE
DATA TO MSTR
SLVE RESET
CS
STB
REF V
CC DOWN
CAM STBY
CAM REC
CAM STB
SS GND
K OUT 3
K OUT 2
K OUT 1
K IN 4
K IN 3
((See page 116.))
TO SS-86 BOARD CN007
K IN 0
K IN 1
K IN 2
K OUT 0
VTR MODE
CAM MODE
S190
AUTO LOCK
MANU ← → AUTO
Q164 2SA1576
Q165 2SK209-Y
— EVER 5V / LI 3V SWITCH —
D161 RD4.7MB2
Q166 2SC4081 EVER 5V DETECT
Q167 FMSIFE INITIAL RESET
Q160 2SA1576 INITIAL RESET
Q168 2SC4081 INITIAL RESET
Q161 2SA1576 INITIAL RESET
D160 MA159
Q163 2SA1576 INITIAL RESET
Q192 FMSIFE LITHIUM BATTERY DETECT
Q191 2SA1576 SYSTEMCLOCK FREQUENCY SWITCH
R146 330k
R145 220k
R149 560k
R147 390k
R148 1M
IC190
µPD7503G-A49 MODE CONTROL
CS
LINCS POWER
CC DOWN
LI BATT
CL 2
VDD
CL 1
RESET
REF V
K IN 4
CG STB
CAMSTB
SLVE RESET
DATA TO MSTR
DATA TO SLVE
CLK
K OUT 3
K OUT 2
K OUT 1
K OUT 0
K IN 3
K IN 2
K IN 1
K IN 0
VTR MODE
CAM MODE
CAM REC SW
CAM STBY
X2
X1
VSS
VLC 3
VLC 2
VLC 1
COM 3
COM 2
COM 1
COM 0
X190 32.768kHz
CLOCK
IC191
S-8054ALB VOLTAGE DETECT
VOLTAGE DETECT
S196 BACK LIGHT
SVP
S195 FOCUS
S197 SHUTTER SPEED
D190 RD6.2MB1
Q190 2SC4396 DISPLAY SWITCH
FC-19 BOARD
FD-9 BOARD (1/2)
S150 ZERO MEMORY
S151 EDIT SEARCH −
S152 DATE(+1)
S153 RESET
S154 EDIT SEARCH +
S155 TIME(NEXT)
CN150
FV-3 BOARD
S160 POWER
CAMERA ← → OFF ← → VTR
S161
S162
S163
S164
S165 FF
S166
S167 REC
S168 REW
W160
CN192 BLK
K IN 0
K OUT 0
FP-146
FP-145
TI-13 BOARD
CN170
S170 TITLE 1
S171 TITLE 2
SUPERIMPOSE
S172 MEMORY
S173 COLOR
W162
EJ-6 BOARD
S169 EJECT
CN190
W150
FD-9 BOARD (1/2)
LCD
COUNTER
ZERO MEM
AM
PM
88:88:88
SP LP
REC/PB mode

FC-19 (MODE CONTROL), FV-3 (POWER SWITCH, VTR FUNCTION SWITCH), FD-9 (CAMERA FUNCTION SWITCH), EJ-6 (EJECT SWITCH), TI-13 (DIGITAL TITLER SWITCH) PRINTED WIRING BOARDS

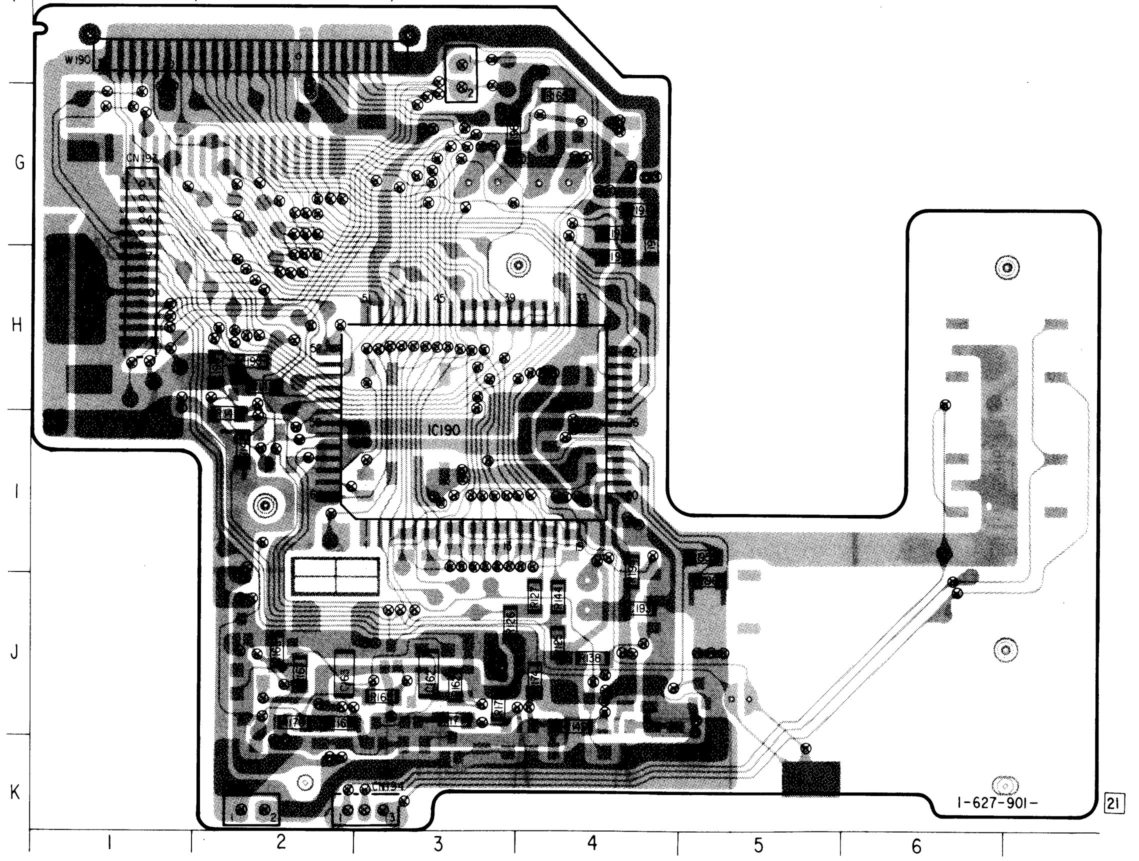
—Ref. No. FC-19, FV-3, FD-9, EJ-6 and TI-13 BOARDS: 4,000 series—

CN190	E·1
CN191	K·2
CN192	F·3
CN193	G·1
CN194	K·3
CT190	B·4
D160	B·3
D161	A·2
D190	E·4
IC190	H·3
IC191	E·4
Q160	A·3
Q161	A·3
Q163	B·3
Q164	A·2
Q165	A·2
Q166	B·2
Q167	A·4
Q168	A·3
Q190	A·5
Q191	C·2
Q192	A·4
TP190	F·1
TP191	F·3
W190	F·1

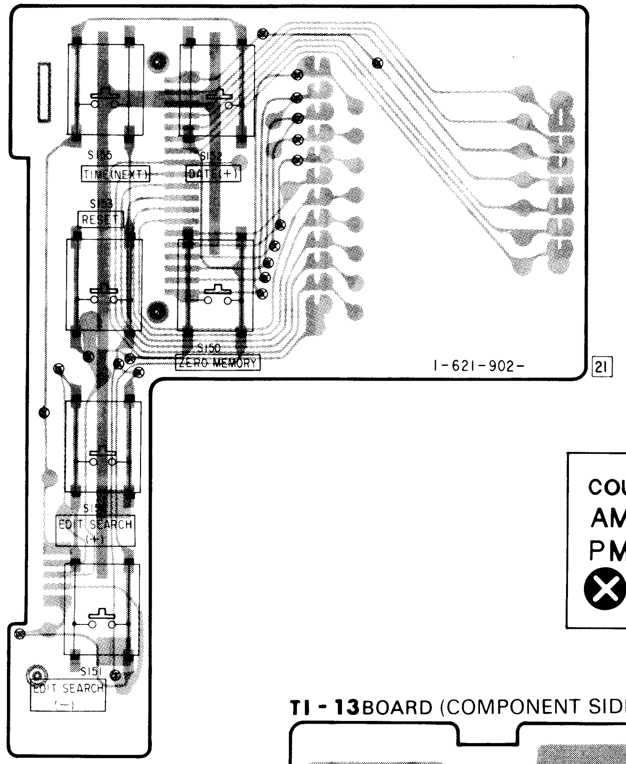
FC-19 BOARD (COMPONENT SIDE)


A
B
C
D
E
Q160
Q161
Q167
Q192
Q190
X190
AUTO LIGHT
BACK LIGHT
FOCUS
AUTO/
MANU
S191
S192
CN190
C181
C192
TP191
1-627-901-
21

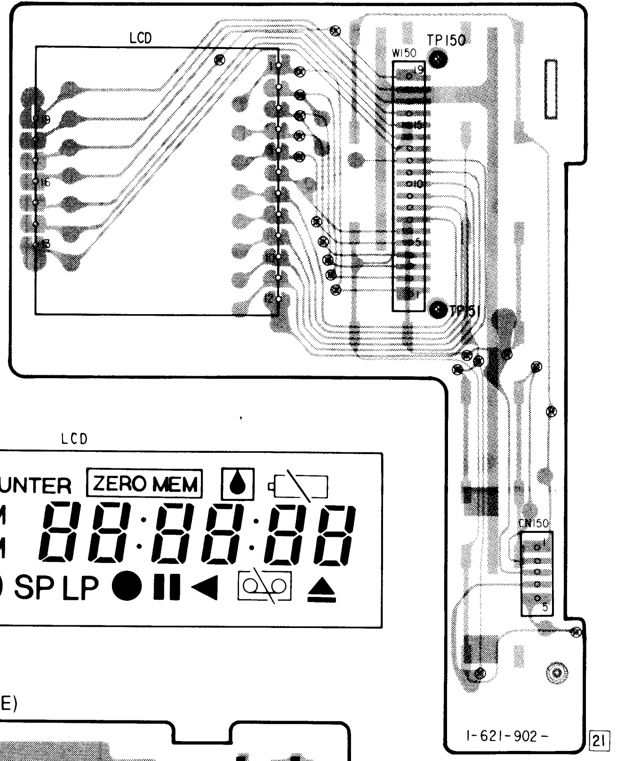
FC-19 BOARD (CONDUCTOR SIDE)


F
G
H
I
J
K
W190
CN193
IC190
1-627-901-
21
1
2
3
4
5
6

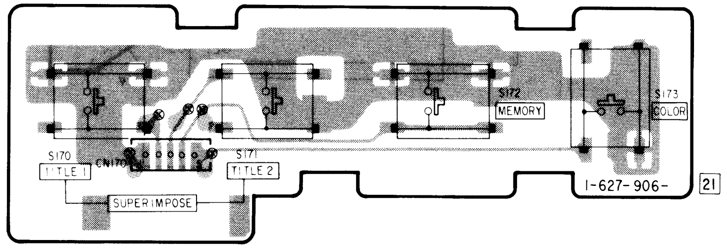
FD-9 BOARD (COMPONENT SIDE)


S150
TIME(NEXT)
S152
DATE(+1)
S153
RESET
S150
ZERO MEMORY
EDIT SEARCH
(+)
S151
EDIT SEARCH
(−)
1-621-902-
21

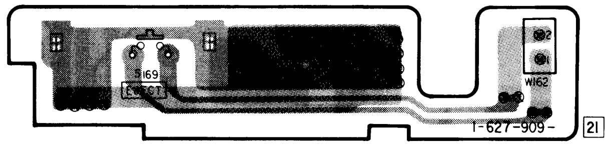
FD-9 BOARD (CONDUCTOR SIDE)


LCD
TP150
W150
TP151
CN150
LCD
COUNTER
ZERO MEM
AM
PM
88:88:88
SP
LP
1-621-902-
21

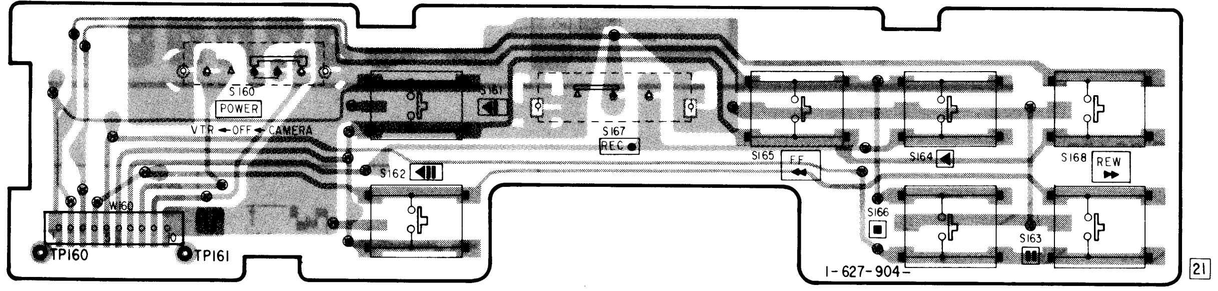
TI-13 BOARD (COMPONENT SIDE)


S170
TITLE 1
CN170
S171
TITLE 2
S172
MEMORY
S173
COLOR
SUPERIMPOSE
1-627-906-
21

EJ-6 BOARD (CONDUCTOR SIDE)


S169
EJECT
W162
1-627-909-
21

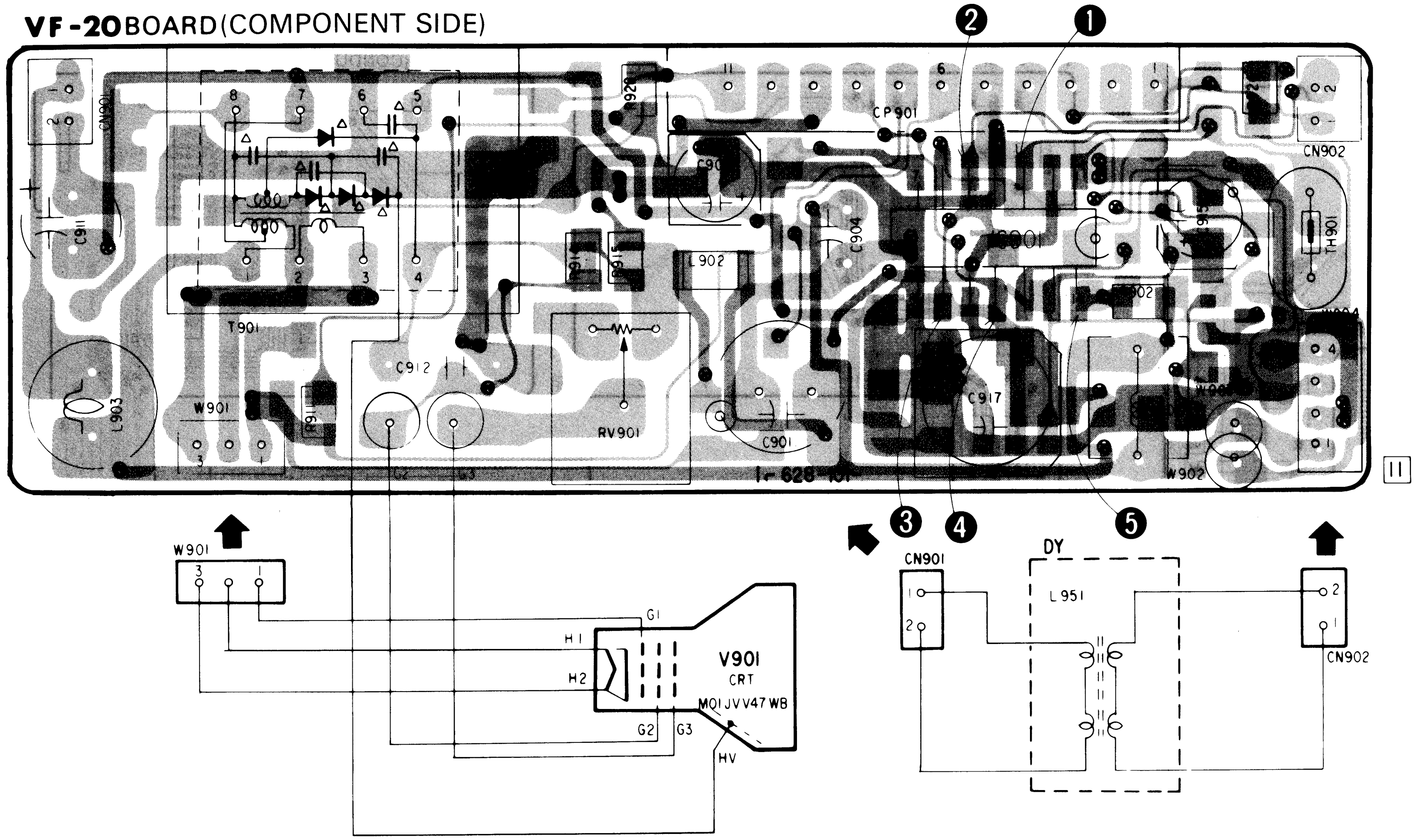
FV-3 BOARD (COMPONENT SIDE)


S160
POWER
VTR ← OFF → CAMERA
S161
S167
REC
S162
S165
FF
S164
S168
REW
S166
S163
W160
TP160
TP161
1-627-904-
21

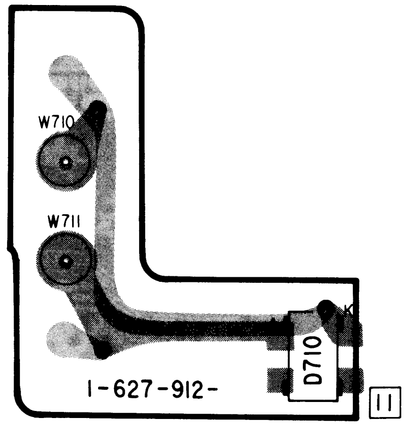
VF-20 (VIEW FINDER), TL-21 (LED), TL-24 (LED) PRINTED WIRING BOARDS

—Ref. No. VF-20, TL-21 and TL-24 BOARDS: 5,000 series—

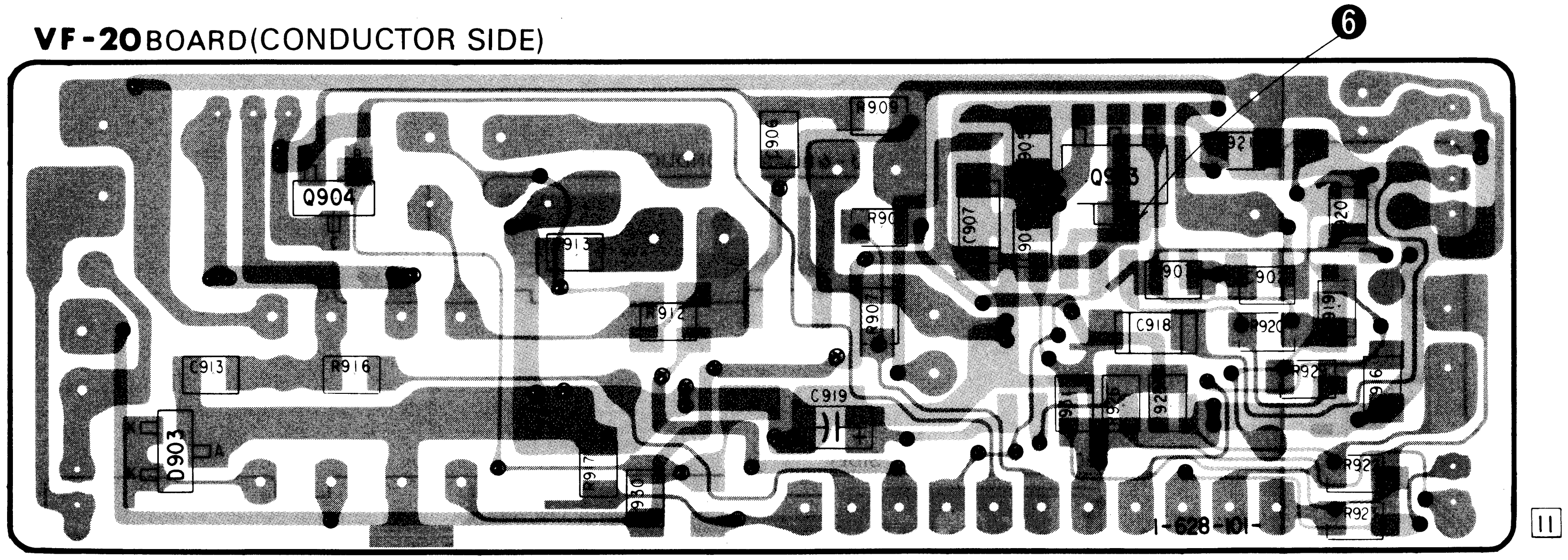
VF-20 BOARD (COMPONENT SIDE)


❶
❷
❸
❹
❺
CN901
CN902
CP901
T901
C911
L903
W901
C912
RV901
C901
C904
C917
L902
TH901
W902
1-628-101
V901
CRT
M01JVV47WB
G1
H1
H2
G2
G3
HV
DY
L951
11

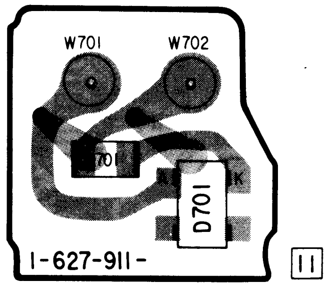
TL-24 BOARD (COMPONENT SIDE)


W710
W711
D710
K
1-627-912-
11

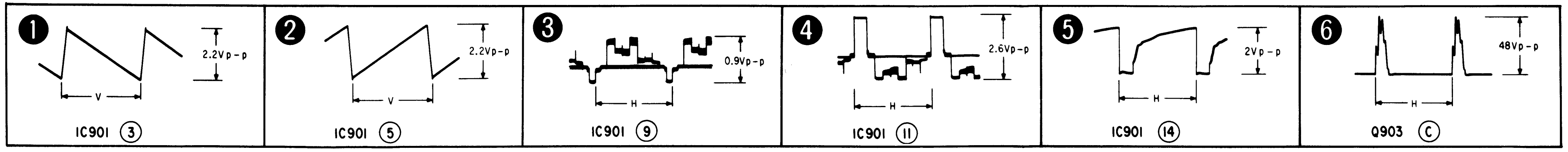
VF-20 BOARD (CONDUCTOR SIDE)


❻
Q904
C913
R916
D903
A
K
C919
C918
C907
1-628-101
11

TL-21 BOARD (COMPONENT SIDE)

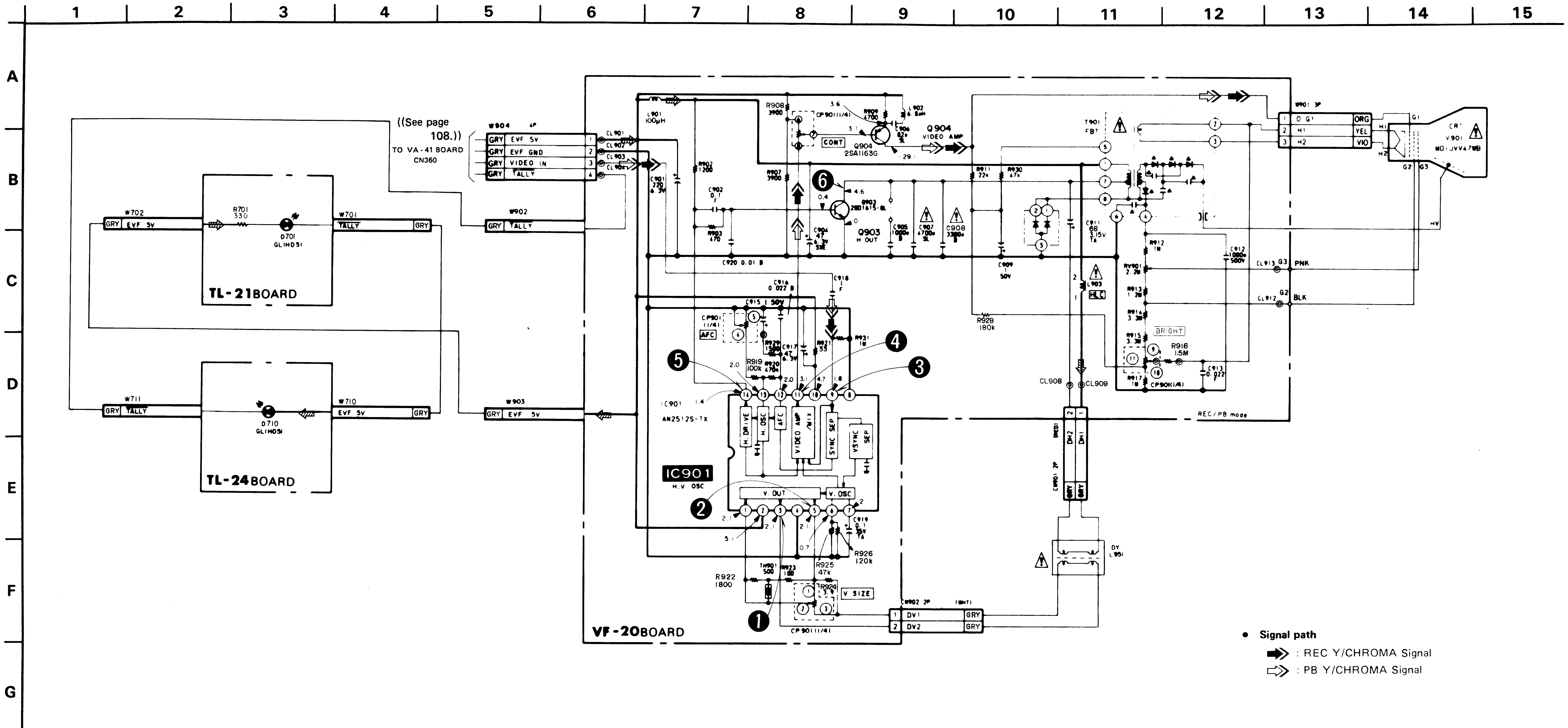

W701
W702
D701
K
1-627-911-
11

VF-20 BOARD



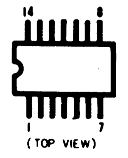
VF-20 (VIEWFINDER), TL-21 (LED), TL-24 (LED) SCHEMATIC DIAGRAM

—Ref. No. VF-20, TL-21 and TL-24 BOARDS : 5,000 series—

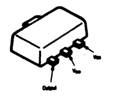

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
((See page 108.))
TO VA-41 BOARD CN360
W904 4P
EVF 5V
EVF GND
VIDEO IN
TALLY
GRY
W702
EVF 5V
R701 330
D701 GL1HD51
W701
TALLY
TL-21BOARD
W902
W711
TALLY
D710 GL1HD51
W710
EVF 5V
TL-24BOARD
W903
EVF 5V
CL901
CL902
CL903
CL904
L901 100μH
C901 220 6.3V
R902 1200
C902 0.1
R903 470
C920 0.01 B
R908 3900
R907 3900
CP901(1/4)
CONT
Q904 2SA1163G
Q904 VIDEO AMP
L902 6.8mH
R909 4700
C906 82p SL
Q903 2SD1615-QL
Q903 H OUT
C904 47 6.3V
C905 1000p
C907 4700p SL
C908 3300p
C909 50V
R911 22k
R930 47k
T901 FBT
C911 68 3.15V
R912 1M
C912 1000p 500V
RV901 2.2M
R913 1.2M
R914 3.3M
R915 3.3M
R916 1.5M
R917 1M
C913 0.022
BRIGHT
CP901(1/4)
HLC
R928 180k
CL908
CL909
CL913 G3 PNK
CL912 G2 BLK
V901 3P
G1
H1
H2
ORG
YEL
VIO
CRT
V901
M01JVV47WB
G2 G3
HV
REC/PB mode
C916 0.022 B
C918 1
C915 1 50V
CP901 (1/4)
AFC
R929 1.5k
C917 47 6.3V
R919 100k
R920 470k
R921 33
R931 1M
IC901
AN2512S-TX
H. DRIVE
H. OSC
AFC
VIDEO AMP
/MIX
SYNC SEP
VSYNC SEP
IC901
H.V OSC
V. OUT
V. OSC
C919 0.1 35V TA
R926 120k
R925 47k
R924
R923 100
TH901 500
R922 1800
V SIZE
CP901 (1/4)
CN902 2P
DV1
DV2
GRY
CN901 2P
DH2
DH1
DY L951
VF-20BOARD
● Signal path
➡ : REC Y/CHROMA Signal
⇨ : PB Y/CHROMA Signal

4-3. SEMICONDUCTORS

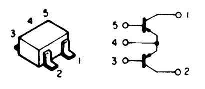
AN2512S


14
8
1
7
(TOP VIEW)

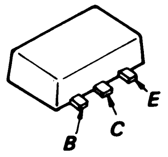
S-8054ALB-LM-S



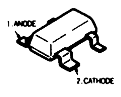
FMS1FE


4
5
3
2
1
5
4
3
1
2

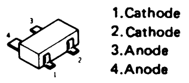
2SD1615



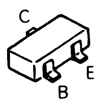
GL-1HD51


1.ANODE
2.CATHODE

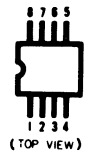
MA159


1.Cathode
2.Cathode
3.Anode
4.Anode

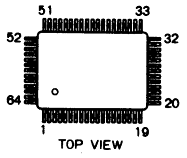
2SA1163
2SA1576
2SC4081-R
2SC4396
2SD1819A-Q



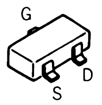
LA7293M


8 7 6 5
1 2 3 4
(TOP VIEW)

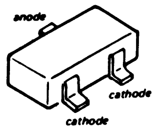
μPD7503G-A49


51
33
52
32
64
20
1
19
TOP VIEW

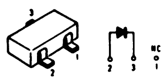
2SK94-X2



MA152WA


anode
cathode
cathode

RD10M-B2
RD12M-B1
RD4.7M-B2
RD6.2M-B1



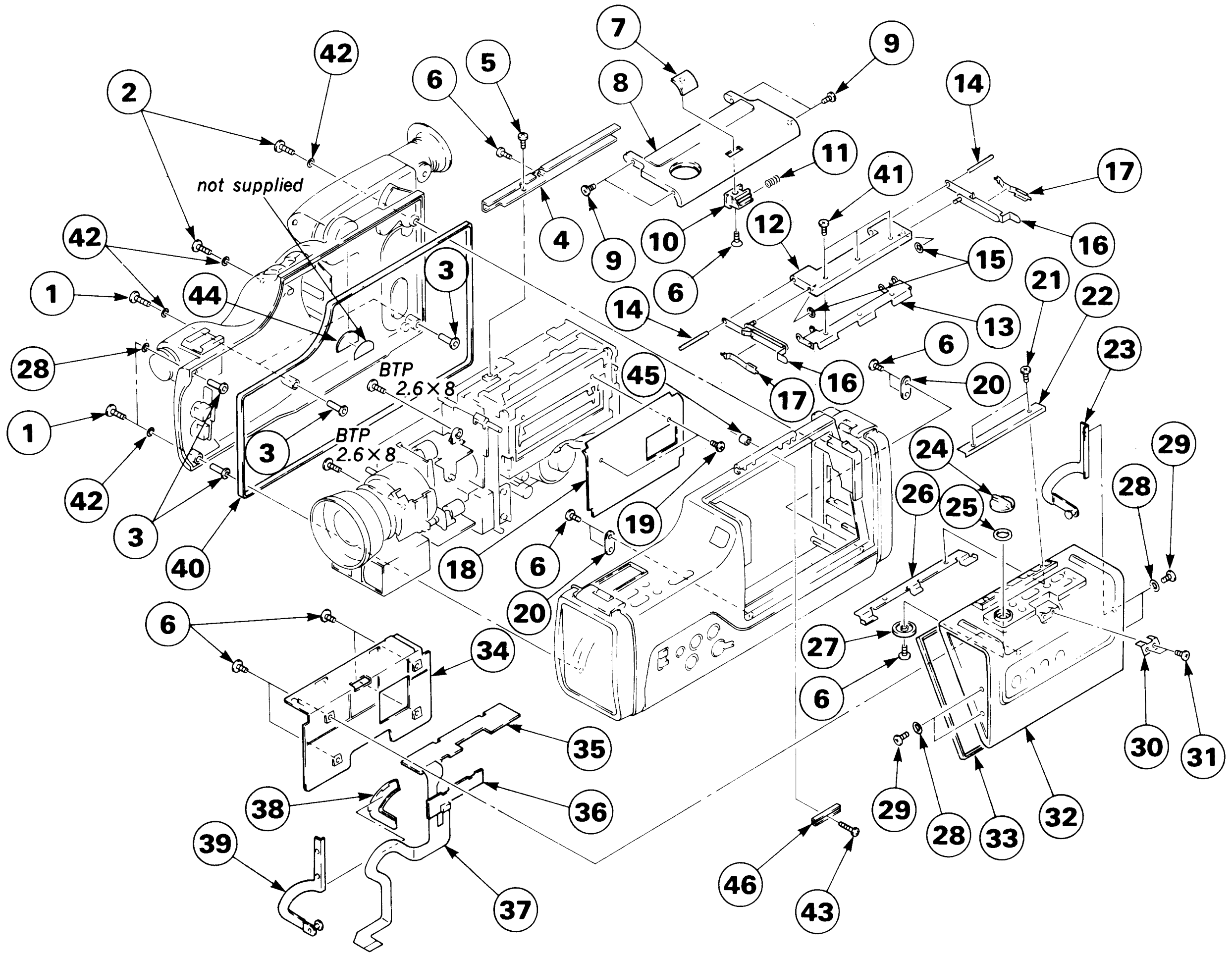
SECTION 5
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ Cabinet's Color ↑ Parts' Color

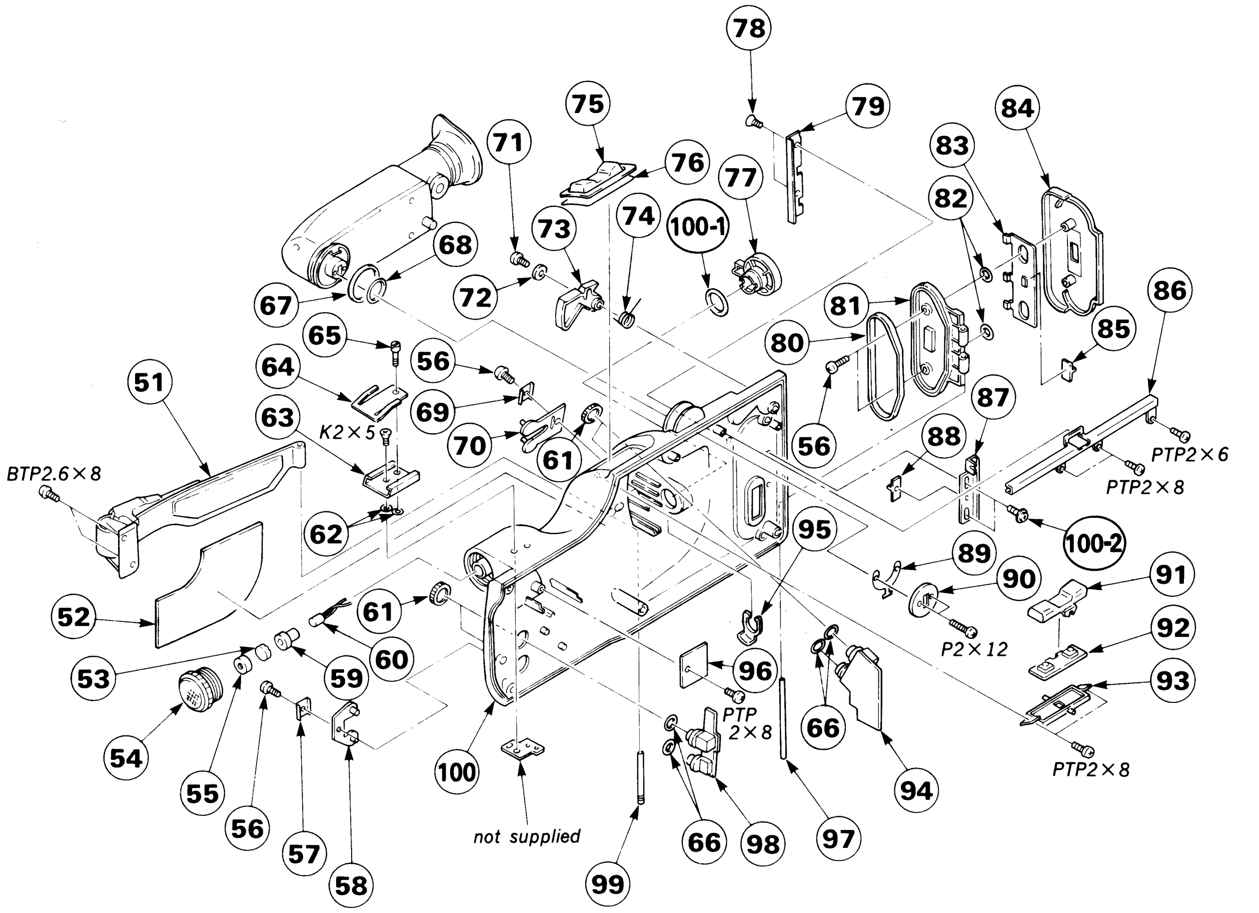
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

5-1. VTR BUTTON COVER AND CASSETTE LID ASSEMBLIES



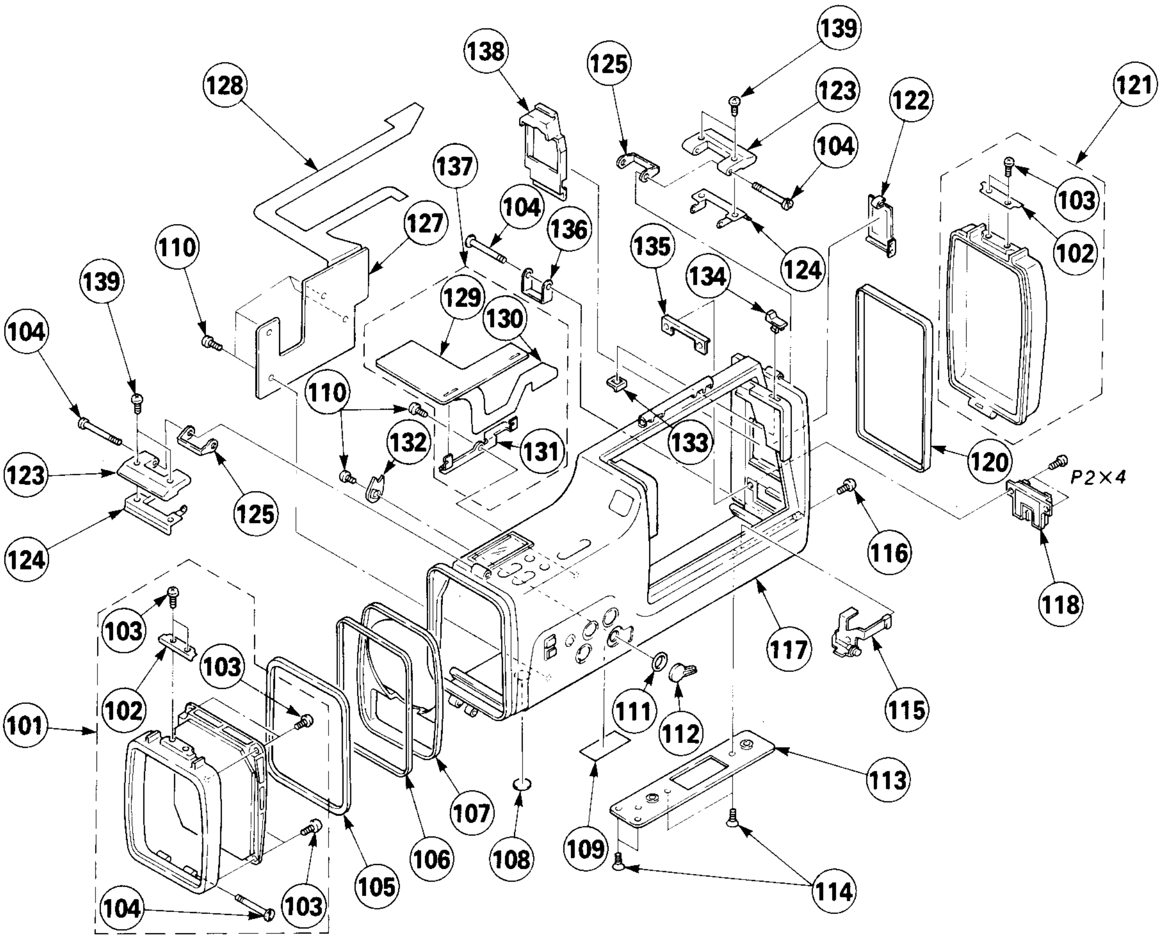
No.	Part No.	Description	Remark
1	3-728-644-01	SCREW, CABINET	
2	3-728-662-01	SCREW (2.6X10), TAPPING	
3	3-728-645-01	SLEEVE	
4	*3-703-835-01	REINFORCEMENT, CABINET(R)	
5	3-719-381-01	SCREW (M2X4)	
6	3-713-790-01	SCREW (M2X6), TAPPING, P3	
7	3-726-567-01	KNOB, BUTTON COVER LOCK	
8	3-728-538-01	COVER, VTR BUTTON	
9	3-728-661-01	SCREW (M2X3)	
10	3-726-582-01	LEVER, LOCK, BUTTON COVER	
11	3-564-951-00	SPRING, COMPRESSION	
12	3-728-543-01	BUCKLE	
13	3-728-544-01	STOPPER, BUCKLE	
14	3-728-545-01	SHAFT, BUCKLE	
15	9-910-999-36	RING (E1.5) RETAINING	
16	X-3724-590-1	LEVER ASSY, SLIDE	
17	3-728-546-01	SPRING	
18	3-726-586-01	LID, CASSETTE COMPARTMENT	
19	3-713-791-01	SCREW (M1.7X5), TAPPING, P2	
20	3-728-599-01	RETAINER, SHAFT	
21	2-115-897-21	SCREW (M2X10) (SUS)	
22	3-728-519-01	RETAINER (A), BUCKLE	
23	X-3724-587-1	BRACKET (R) ASSY, CASSETTE LID	
24	3-726-572-01	KNOB, POWER	
25	3-728-663-01	RING (P 7), O	
26	3-728-520-01	RETAINER (B), BUCKLE	
27	3-726-573-01	HOLDER, POWER KNOB	
28	2-115-882-01	RING	
29	3-728-660-01	SCREW (M2X4)	
30	3-728-521-01	PLATE, LOCK, BUTTON COVER	
31	3-728-659-01	SCREW (2X5), TAPPING	
32	X-3725-174-1	LID ASSY, CASSETTE (YELLOW)	
32	X-3725-175-1	LID ASSY, CASSETTE (GRAY)	
33	3-728-604-01	PACKING, CASSETTE LID	
34	3-728-558-01	LID (REAR), CASSETTE	
35	*A-7070-721-A	FV-3 BOARD, COMPLETE	
36	*A-7070-722-A	TI-13 BOARD, COMPLETE	
37	1-627-900-11	FP-146 FLEXIBLE BOARD	
38	3-726-575-01	COVER, BRACKET, CASSETTE LID	
39	X-3724-586-1	BRACKET (F) ASSY, CASSETTE LID	
40	3-728-557-01	PACKING, CABINET	
41	2-115-893-01	SCREW (M1.7X2.5)	
42	3-728-664-01	RING, O	
43	3-703-857-01	+P M2X14	
44	3-703-844-01	RETAINER (B)	
45	3-703-845-01	SPACER	
46	3-703-843-01	RETAINER (A)	

5-2. CABINET (LEFT) ASSEMBLY



No.	Part No.	Description	Remark
51	3-728-579-01	BELT, GRIP	
52	*3-728-563-01	RUBBER, GRIP	
53	3-730-850-01	SHEET, WATERPROOF	
54	X-3724-594-1	NET ASSY, MICROPHONE	
55	2-115-879-01	RING, RETAINER	
56	3-728-659-01	SCREW (2X5), TAPPING	
57	3-728-576-01	RETAINER, MIC JACK LID	
58	3-728-575-01	LID, MIC JACK	
59	3-728-593-01	HOLDER, MICROPHONE	
60	A-7090-863-A	MIC ASSY (C-1007D)	
61	3-728-674-01	NUT, ROUND, KNURL	
62	2-115-882-01	RING	
63	3-688-985-01	SHOE, ACCESSORY	
64	3-688-940-11	SPRING, LEAF	
65	2-120-002-01	SCREW, ACC LINING STOPPER	
66	3-336-115-01	RING, O	
67	3-728-597-01	BUSHING, EVF	
68	3-728-672-01	RING (P12), O	
69	3-728-574-01	RETAINER, LINCS JACK LID	
70	3-728-581-01	LID, LINCS JACK	
71	2-120-001-01	SCREW (2.6X8), TAPPING, (+) (K)	
72	3-730-809-01	BRACKET, LOCK KNOB	
73	3-726-592-01	KNOB, LOCK, EVF (YELLOW)	
73	3-726-592-21	KNOB, LOCK, EVF (GRAY)	
74	3-728-582-01	SPRING, TORSION	
75	3-730-812-01	BUTTON, ZOOM	
76	3-730-811-01	SHEET, ADHESIVE, ZOOM BUTTON	
77	X-3724-593-1	SWITCH ASSY, REC	
78	3-728-693-01	SCREW (2X5) (TYPE 2), TAPPING	
79	3-728-568-01	PLATE (UPPER), LOCK, JACK LID	
80	3-728-569-01	PACKING, JACK LID	
81	3-726-594-01	LID (LOWER), JACK (YELLOW)	
81	3-726-594-21	LID (LOWER), JACK (GRAY)	
82	3-669-946-00	RING (P4), O	
83	3-728-577-01	PLATE (LOWER), LOCK, JACK LID	
84	3-728-567-01	LID (UPPER), JACK (YELLOW)	
84	3-728-567-21	LID (UPPER), JACK (GRAY)	
85	3-726-577-01	KNOB, LOCK, JACK LID (YELLOW)	
85	3-726-577-21	KNOB, LOCK, JACK LID (GRAY)	
86	3-728-580-01	REINFORCEMENT, CABINET (L)	
87	3-728-571-01	PLATE, SWITCH, EDIT	
88	3-728-570-01	KNOB, EDIT	
89	3-728-671-01	SPRING	
90	3-728-670-01	BRACKET, EVF	
91	3-726-591-01	KEY, ZOOM	
92	*1-627-910-21	ZM-9 BOARD	
93	3-726-590-01	BASE, ZOOM BUTTON	
94	*A-7070-723-A	SW-93 BOARD, COMPLETE	
95	3-726-579-01	PLATE, LOCK, REC	
96	*A-7061-278-A	MC-29 BOARD, COMPLETE	
97	3-728-583-01	SHAFT, JACK LID	
98	*1-627-908-21	MJ-19 BOARD	
99	3-728-578-01	SHAFT, GRIP BELT FITTING	
100	X-3725-167-1	CABINET (LEFT) ASSY (YELLOW)	52, 75, 76
100	X-3725-164-1	CABINET (LEFT) ASSY (GRAY)	52, 75, 76
100-1	4-870-946-00	RING (P11), O	
100-2	3-669-480-21	SCREW, +PTPWH2	

5-3. CABINET (RIGHT) ASSEMBLY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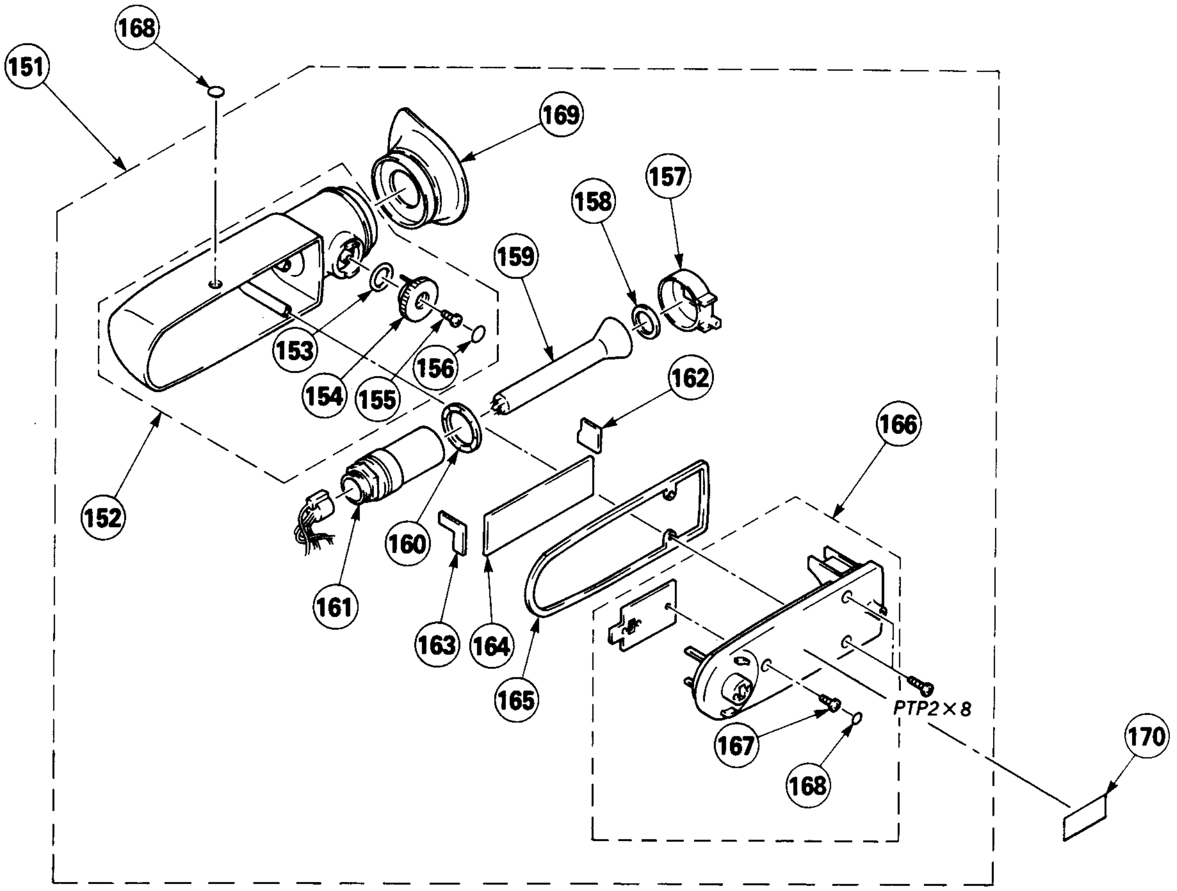
No.	Part No.	Description	Remark
101	A-7080-564-A	CABINET BLOCK ASSY, FRONT(YELLOW)	102-104
101	A-7080-620-A	CABINET BLOCK ASSY, FRONT(GRAY)	102-104
102	3-728-508-01	RETAINER, BUCKLE (S)	
103	3-728-659-01	SCREW (2X5), TAPPING	
104	3-728-559-01	SCREW, FRONT CABINET	
105	3-728-550-01	ORNAMENT, FRONT	
106	3-728-555-01	PACKING, FRONT	
107	3-726-595-01	PLATE, LIGHT TRANSMISSION	
108	3-728-602-01	PLATE, BLIND, ADJUSTMENT HOLE (YELLOW)	
108	3-728-602-21	PLATE, BLIND, ADJUSTMENT HOLE (GRAY)	
109	*3-728-696-01	LABEL, MODEL NUMBER (AEP MODEL)	
109	*3-728-697-01	LABEL, MODEL NUMBER (UK MODEL)	
110	3-713-790-01	SCREW (M2X6), TAPPING, P3	
111	3-728-663-01	RING (P 7), O	
112	3-726-585-01	KNOB, AL	
113	3-728-551-01	SCREW, TRIPOD	
114	2-120-001-01	SCREW (2.6X8), TAPPING, (+) (K)	
115	X-3725-146-1	KNOB ASSY, B LOCK	
116	3-728-661-01	SCREW (M2X3)	
117	X-3724-588-1	CABINET (RIGHT) ASSY (YELLOW)	122, 138
117	X-3725-179-1	CABINET (RIGHT) ASSY (GRAY)	122, 138
118	1-535-658-11	TERMINAL BOARD	
120	3-728-556-01	PACKING, BATTERY COVER	
121	A-7080-565-A	COVER (S) BLOCK ASSY, BATTERY	102, 103
122	3-726-587-01	LID, BATTERY CASE	
123	3-726-583-01	BUCKLE (S) (YELLOW)	
123	3-726-583-21	BUCKLE (S) (GRAY)	
124	3-728-547-01	STOPPER, BUCKLE (S)	
125	3-728-548-01	BRACKET, BELT	
127	*A-7061-274-A	FC-19 BOARD, COMPLETE	
128	1-627-885-11	FP-144 FLEXIBLE BOARD	
129	*A-7070-718-A	FD-9 BOARD, COMPLETE	
130	1-627-886-11	FP-145 FLEXIBLE BOARD	
131	*3-728-631-01	BRACKET, FD PC BOARD	
132	3-726-568-01	HOLDER, AL KNOB	
133	3-726-571-01	HOLDER, EJECT KNOB	
134	3-726-570-01	KNOB, EJECT	
135	3-728-552-01	BRACKET, TERMINAL	
136	3-728-665-01	BRACKET (LOWER), BELT	
137	*A-7020-077-A	FD-9 ASSY	129-131
138	3-728-666-01	COVER, LI	
139	2-115-893-01	SCREW (M1.7X2.5)	

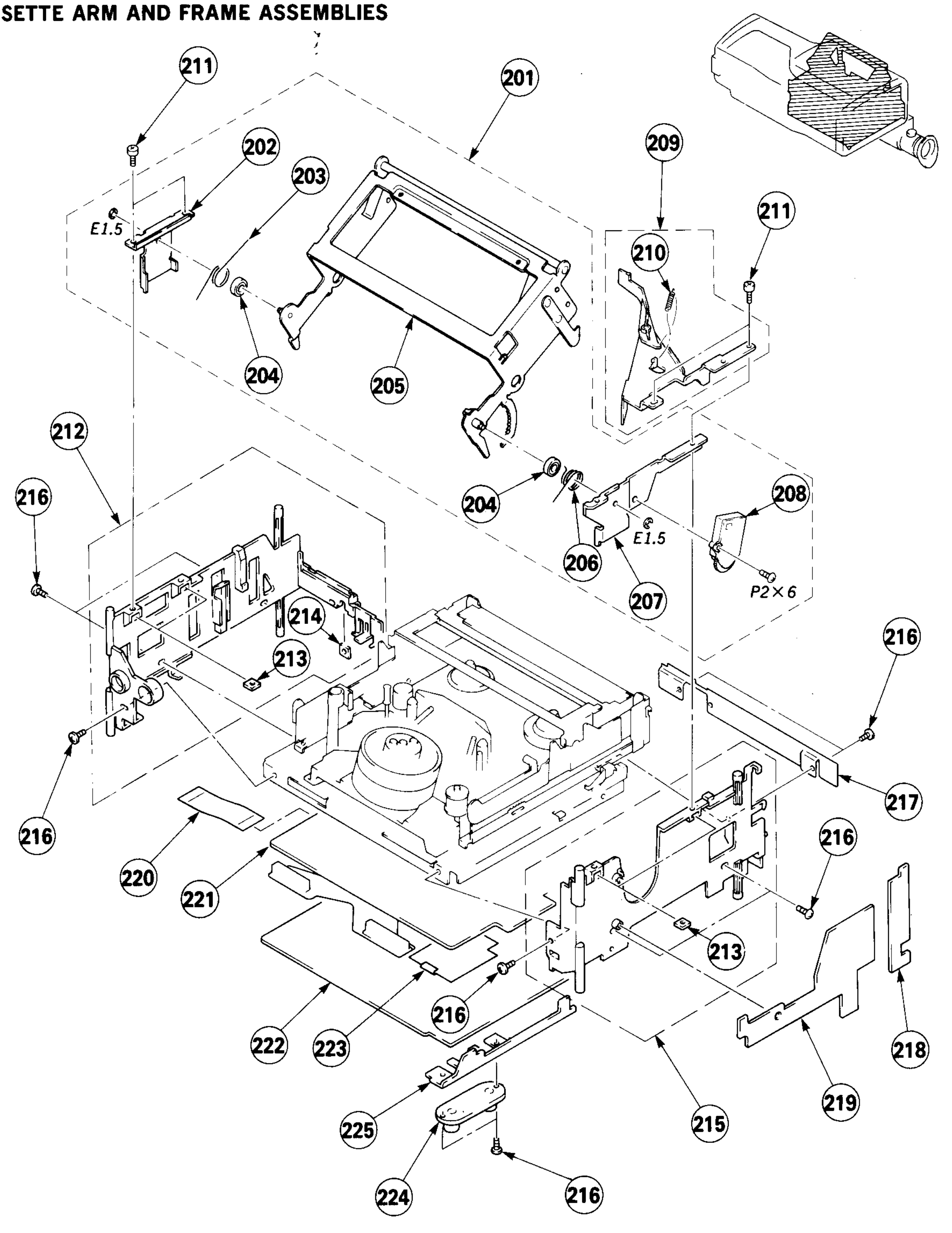
5-4. EVF BLOCK ASSEMBLY



No.	Part No.	Description	Remark
151	A-7019-113-A	EVF BLOCK ASSY (YELLOW)	152-169
151	A-7019-118-A	EVF BLOCK ASSY (GRAY)	152-169
152	X-3725-119-A	CABINET (LEFT) ASSY, EVF(YELLOW)	153-156
152	X-3725-168-1	CABINET (LEFT) ASSY, EVF(GRAY)	153-156
153	3-728-587-01	PACKING, ADJUSTMENT KNOB	
154	3-726-581-01	KNOB, ADJUSTMENT	
155	3-728-659-01	SCREW (2X5), TAPPING	
156	3-703-813-01	PLATE, BLIND, ADJUSTMENT KNOB	
157	X-3724-596-1	HOLDER ASSY, CRT	
158	3-724-570-01	RING, CRT FIXED	
159	⚠.1-546-065-11	CATHODE-RAY TUBE, B/W (MOIJVV47WB) (V901	
160	3-724-549-01	LOCK, CRT	
161	⚠.1-451-310-21	DEFLECTION YOKE (B/W) (L951)	
162	*1-627-911-11	TL-21 BOARD	
163	*1-627-912-11	TL-24 BOARD	
164	*A-7061-321-A	VF-20 BOARD, COMPLETE	
165	3-728-596-01	PACKING, EVF	
166	X-3725-122-1	CABINET (RIGHT) ASSY, EVF (YELLOW)	167, 168
166	X-3725-162-1	CABINET (RIGHT) ASSY, EVF (GRAY)	167, 168
167	2-115-897-11	SCREW (M2X5) (SUS)	
168	3-728-669-01	PLATE, BLIND, FOCUS (YELLOW)	
168	3-728-669-21	PLATE, BLIND, FOCUS (GRAY)	
169	3-724-544-02	EYE CUP	
170	*3-704-235-01	LABEL, CAUTION (UK MODEL)	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

5-5. CASSETTE ARM AND FRAME ASSEMBLIES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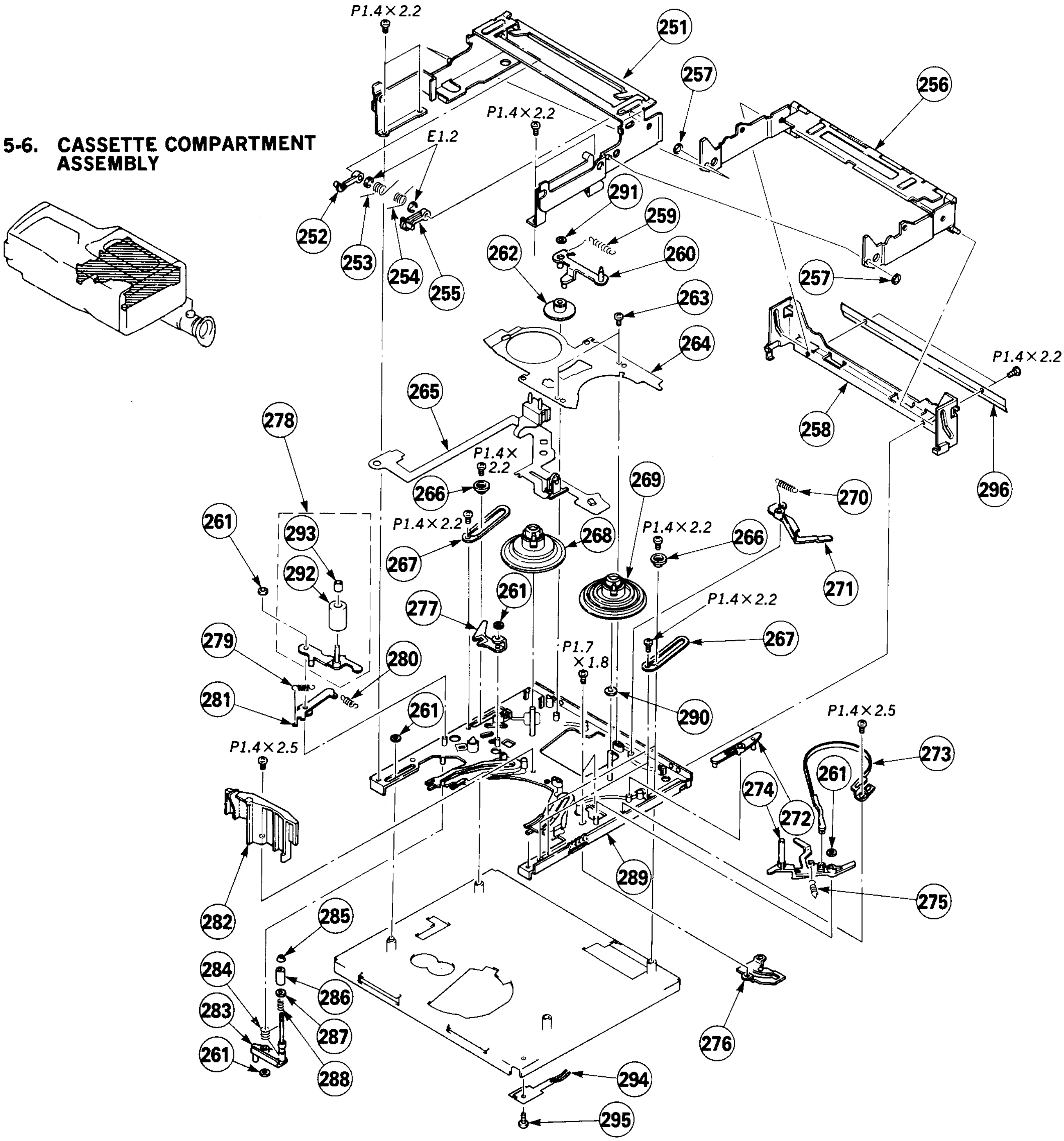
No.	Part No.	Description	Remark
201	A-7040-141-A	ARM BLOCK ASSY (3), CASSETTE	202-208
202	*3-719-606-01	PLATE (T2) (M), SIDE	
203	3-695-582-01	SPRING, TORSION	
204	3-695-512-02	COLLAR, CASSETTE ARM	
205	X-3712-034-4	ARM ASSY (2), CASSETTE	
206	3-695-581-01	SPRING, TORSION	
207	3-695-641-01	PLATE (S2), SIDE	
208	3-681-528-11	DAMPER	
209	A-7040-140-B	GUARD BLOCK ASSY, TAPE	210
210	3-695-718-01	SPRING, TENSION	
211	3-719-697-01	SCREW (M1.7X5), SPECIAL HEAD	
212	*X-3724-503-1	FRAME (F) ASSY, MD	213, 214
213	3-716-418-01	NUT, FRAME PLATE	
214	3-718-233-01	NUT, PLATE	
215	*X-3724-504-1	FRAME (R) ASSY, MD	213
216	3-719-695-01	SCREW (M1.7X3.5), SPECIAL HEAD	
217	*3-728-689-01	PLATE (B), BLIND, MD	
218	*1-627-909-21	EJ-6 BOARD	
219	*1-627-905-21	PA-14 BOARD	
220	1-574-083-11	CABLE, FLAT (1.0MM PITCH) 15P	
221	*A-7061-299-A	SS-86 BOARD, COMPLETE	
222	*A-7061-298-A	VA-41 BOARD, COMPLETE	
223	*3-726-558-01	PLATE, SHIELD, VA-SS	
224	1-537-142-11	TERMINAL BOARD (AV OUT) (J361)	
225	*X-3724-577-1	REINFORCEMENT (B) ASSY, VA	

5-6. CASSETTE COMPARTMENT ASSEMBLY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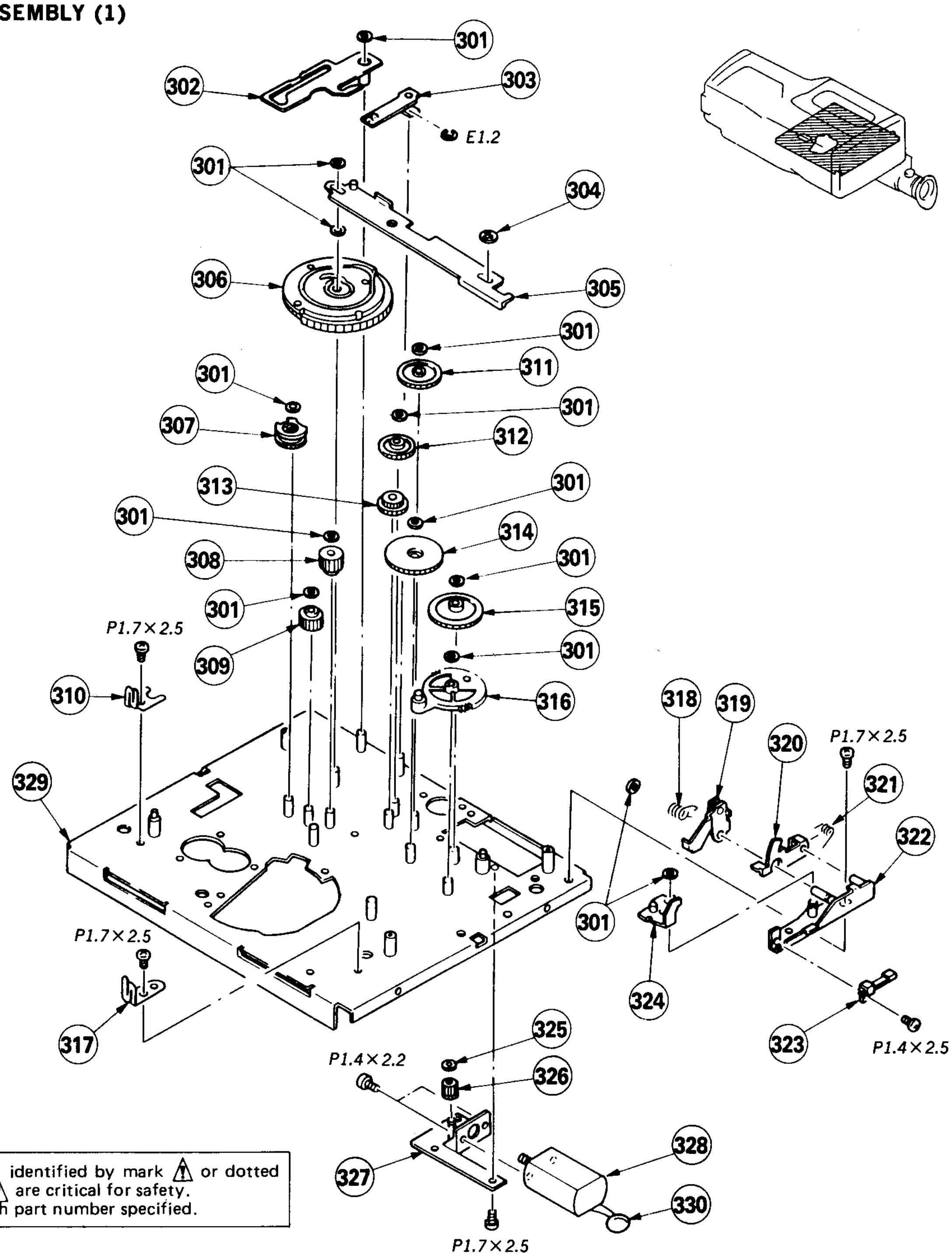
No.	Part No.	Description	Remark
251	X-3695-447-6	COMPARTMENT ASSY, CASSETTE, LS	
252	3-695-595-01	RETAINER (T), CASSETTE	
253	3-695-605-01	SPRING, TORSION	
254	3-695-604-01	SPRING, TORSION	
255	3-695-594-01	RETAINER (S), CASSETTE	
256	X-3695-448-3	ARM ASSY, BLIND	
257	3-669-465-00	WASHER (1.5), STOPPER	
258	3-695-646-01	ARM, LS	
259	3-695-718-01	SPRING, TENSION	
260	X-3712-037-1	LEVER (A) ASSY (2)	
261	3-315-384-31	WASHER, STOPPER	
262	X-3712-025-1	GEAR ASSY, TS	
263	3-699-402-01	SCREW (M1.3X5.5), TAPPING	
264	3-712-165-01	PLATE (2), STOPPER	
265	A-7060-693-A	FP-53 BOARD, COMPLETE	
266	3-695-698-01	GUIDE, LS	
267	3-695-697-01	SPRING, LEAF, LS	
268	X-3695-436-1	TABLE ASSY, REEL, TAKE-UP	
269	X-3712-038-1	TABLE ASSY (2), REEL, SUPPLY	290
270	3-542-475-00	SPRING, TENSION	
271	3-712-151-01	BRAKE (2), SOFT	
272	3-695-735-04	ARM, TG1 RELEASE	
273	X-3695-432-1	BAND ASSY, TG1	
274	X-3712-019-1	ARM ASSY (2), TG1	
275	3-695-591-01	SPRING, TENSION	
276	3-695-733-01	PLATE, CAM, LS	
277	X-3712-022-1	ARM (B) ASSY (2), PINCH	
278	X-3712-032-2	ARM (C) ASSY (2), PINCH	292, 293
279	3-695-622-01	SPRING, TENSION	
280	3-695-719-01	SPRING, TENSION	
281	X-3695-415-1	PINCH LEVER ASSY	
282	3-695-624-01	BASE, PROTECT	
283	X-3712-027-1	ARM ASSY (2), TG7	
284	3-695-541-01	SPRING	
285	3-712-158-01	FLANGE, UPPER, TG7	
286	3-712-160-01	SLEEVE (2), TG7	
287	3-712-159-01	FLANGE, LOWER, TG7	
288	3-712-157-01	SPRING, COMPRESSION	
289	X-3713-962-1	CHASSIS ASSY (2), LS	
290	3-701-444-01	WASHER, 6	
291	3-321-393-01	WASHER, STOPPER	
292	X-3695-416-1	PINCH ROLLER ASSY	
293	3-695-569-01	SLEEVE (P), PINCH INNER	
294	*3-725-151-01	PLATE, GROUND, RP	
295	3-719-695-21	SCREW (M1.7X2.5), SPECIAL HEAD	
296	*3-728-688-01	PLATE (A), BLIND, MD	

5-7. CHASSIS ASSEMBLY (1)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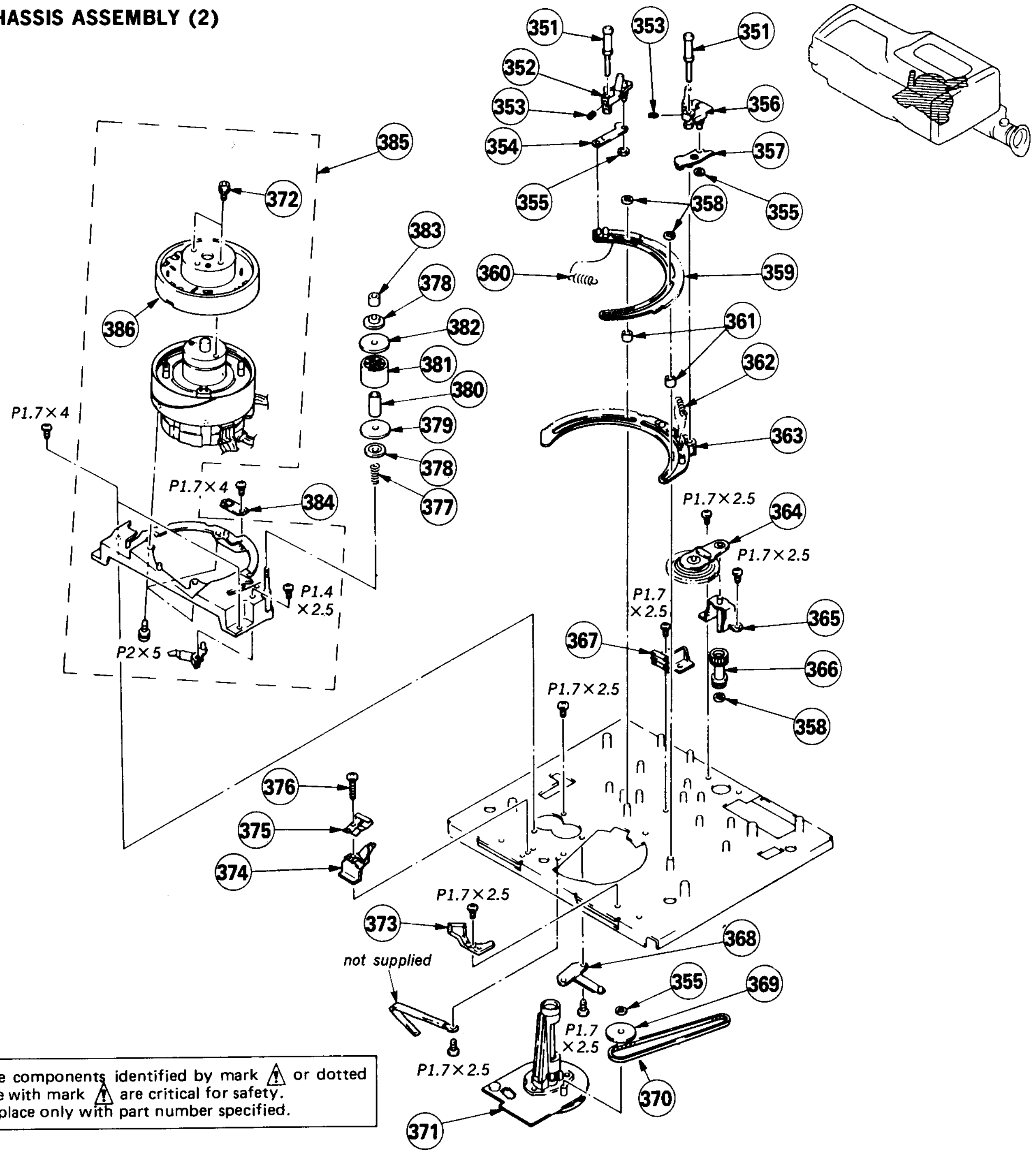
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

No.	Part No.	Description	Remark
301	3-315-384-31	WASHER, STOPPER	
302	X-3712-023-1	ARM (A) ASSY (2), PINCH	
303	3-695-589-01	LEVER (B), REEL LOCK	
304	3-669-465-00	WASHER (1.5), STOPPER	
305	X-3695-439-4	SLIDER ASSY, M	
306	X-3712-031-1	CAM ASSY (2)	
307	3-712-156-01	GEAR (M) (2), THREADING	
308	3-695-537-01	GEAR (T), THREADING	
309	3-695-536-01	GEAR (S), THREADING	
310	3-695-706-01	SPRING (T)	
311	3-695-559-01	GEAR (B), THREADING	
312	3-695-724-01	GEAR (D), THREADING	
313	3-712-162-02	GEAR (C) (2), THREADING	
314	3-695-714-01	GEAR (A), LS	
315	3-695-563-04	GEAR (B), LS	
316	X-3695-417-1	GEAR (C) ASSY, LS	
317	3-695-705-01	SPRING (S)	
318	3-713-937-01	SPRING (A) (2)	
319	X-3695-418-1	ARM ASSY, LOCK	
320	3-695-574-01	ARM, RETURN PREVENTION	
321	3-695-579-01	SPRING (B), TORSION	
322	X-3712-018-1	BASE ASSY (2), LOCK	
323	1-553-226-00	SWITCH, LEAF (CASSETTE DOWN) (S902)	
324	X-3695-438-1	ARM ASSY, EJECT	
325	3-321-393-01	WASHER, STOPPER	
326	3-712-150-01	WHEEL, WORM	
327	X-3712-017-1	HOLDER ASSY, MOTOR	
328	⚠.1-541-508-11	MOTOR, DC (LA14-323F) (LOADIG) (M903)	
329	X-3712-036-1	CHASSIS ASSY (2), MECHANICAL	
330	1-161-032-00	CAP, CERAMIC 0.01MF (C901)	

5-8. CHASSIS ASSEMBLY (2)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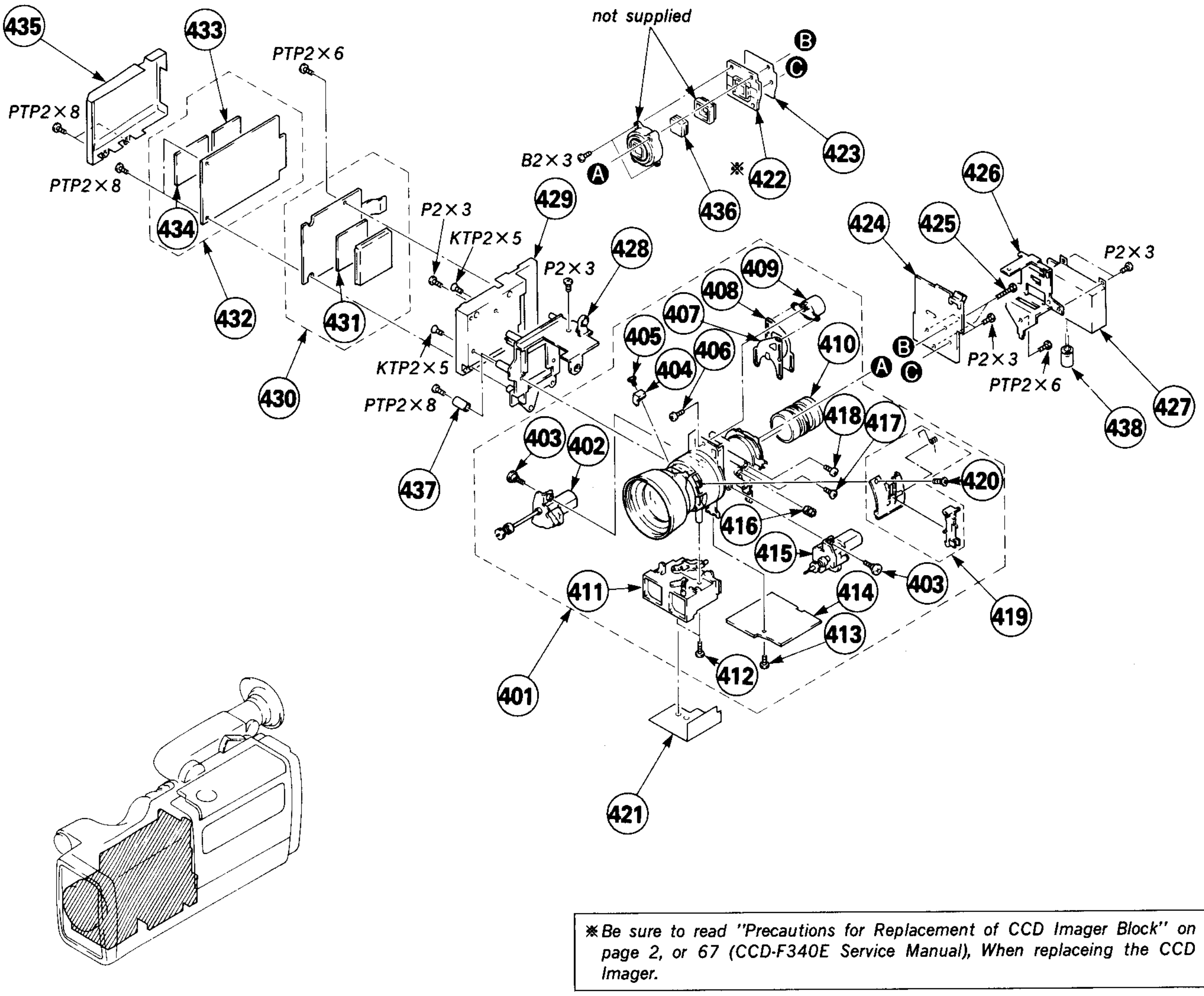
Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

No.	Part No.	Description	Remark
351	X-3712-029-1	ROLLER ASSY (2), GUIDE	
352	X-3712-030-1	BASE ASSY (2), TG5	
353	3-695-770-01	SCREW, GR LOCK	
354	3-695-545-01	JOINT, T	
355	3-321-393-01	WASHER, STOPPER	
356	X-3712-028-1	BASE ASSY (2), TG4	
357	X-3695-429-1	JOINT ASSY, S	
358	3-315-384-31	WASHER, STOPPER	
359	X-3695-414-1	SLIDER (T) ASSY, THREADING	
360	3-695-773-01	SPRING, TENSION	
361	3-695-544-01	ROLLER, GUIDE	
362	3-695-772-01	SPRING, TENSION	
363	X-3695-428-1	SLIDER (S) ASSY, THREADING	
364	X-3712-024-1	ARM ASSY (2), GEAR	
365	X-3712-020-1	BASE ASSY (2), MIDWAY PULLEY	
366	X-3712-021-1	PULLEY ASSY (2), MIDWAY	
367	3-712-163-01	SUPPORT (2), SLIDER	
368	1-535-574-11	TERMINAL, SHAFT GROUND	
369	X-3695-413-1	GEAR ASSY, CHANGE	
370	3-695-637-01	BELT, RELAY	
371	8-835-309-01	MOTOR, DC BHF-3301C (CAPSTAN) (M902)	
372	3-686-440-01	SCREW (2X5), BOLT WASHER	
373	3-695-627-01	STOPPER, SLIDER, S	
374	3-695-628-01	STOPPER, SLIDER, T	
375	3-695-677-01	SPRING (T), LEAF	
376	3-695-519-01	SCREW, FITTING, LEAF SPRING(T)	
377	3-695-532-01	SPRING, COMPRESSION	
378	3-695-727-01	RETAINER, FLANGE, UPPER	
379	3-695-794-01	FLANGE, LOWER, TG2	
380	3-695-530-01	SLEEVE, TG2	
381	3-712-164-01	ROLLER (2), TG2	
382	3-695-528-01	FLANGE, TG2	
383	3-695-529-01	NUT, TG2	
384	1-807-238-11	SENSOR, DEW CONDENSATION	
385	⚠A-7048-177-A	DRUM ASSY (DGU-27B-R)	372, 386
386	A-7049-143-A	DRUM ASSY, UPPER (DGR-27-R)	

5-9. CAMERA ASSEMBLY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※Be sure to read "Precautions for Replacement of CCD Imager Block" on page 2, or 67 (CCD-F340E Service Manual), When replaceing the CCD Imager.

No.	Part No.	Description	Remark
401	1-547-302-11	LENS, ZOOM (VCL-906XC)	402-420
402	3-707-448-01	MOTOR UNIT, AF (M905)	
403	3-707-447-01	SCREW, MOTOR CLAMP	
404	3-707-446-01	STOPPER, (N)	
405	3-707-445-01	SCREW, (N) STOPPER CLAMP	
406	3-707-444-01	SCREW, IG METER CLAMP	
407	3-707-457-01	(B) ASSY, IRIS FEATHER	
408	3-707-458-01	FEATHER, IRIS (A)	
409	3-707-442-01	METER, IG (IRIS) (M904)	
410	3-707-456-01	MIRROR TUBE UNIT, RELAY	
411	3-707-449-01	BLOCK UNIT, AF	
412	3-707-450-01	SCREW, AF BLOCK CLAMP	
413	3-707-459-01	SCREW, AF PC BOARD CLAMP	
414	3-707-521-01	PC BOARD UNIT, AF	
415	3-707-452-01	MOTOR UNIT, ZOOM (M906)	
416	3-707-453-01	ROLLER, ECCECTRIC	
417	3-707-454-01	SCREW	
418	3-707-455-01	SCREW, RELAY SET	
419	3-707-523-01	MICRO UNIT	
420	3-707-522-01	SCREW, MICRO UNIT CLAMP	
421	3-726-533-01	COVER, AF	
422※	A-7090-878-A	CCD ASSY (CCD IMAGER)	
423	*3-725-180-01	SHEET, INSULATING, CCD HOLDER	
424	*A-7061-359-A	VC-38 BOARD, COMPLETE	
425	3-335-640-51	SCREW (M2X16)	
426	3-725-182-01	JOINT	
427	1-464-993-11	CONVERTER, DC-DC	
428	*3-726-596-01	FRAME, CAMERA	
429	*X-3724-550-1	CASE (A) ASSY, SHIELD, VC	
430	*A-7061-295-A	VC-39 BOARD, COMPLETE	431
431	A-7068-127-A	DT-71 BOARD, COMPLETE (HIC)	
432	*A-7061-296-A	VC-40 BOARD, COMPLETE	433, 434
433	A-7068-129-A	PR-20 BOARD, COMPLETE (HIC)	
434	A-7068-128-A	MX-7 BOARD, COMPLETE (HIC)	
435	*X-3724-551-1	CASE (B) ASSY, SHIELD, VC	
436	A-7090-879-A	KIT, FILTER, OPTICAL	
437	3-728-690-01	SLEEVE, CF	
438	1-124-472-11	CAP, ELECT 470MF	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA...,
UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

FC-19

Ref.No	Part No.	Description	Remark
	*A-7061-274-A	FC-19 BOARD, COMPLETE **********************	
		CAPACITOR	
C160	1-163-021-00	CERAMIC CHIP 0.01MF 10%	50V
C161	1-163-021-00	CERAMIC CHIP 0.01MF 10%	50V
C162	1-162-638-11	CERAMIC CHIP 1MF	16V
C163	1-162-638-11	CERAMIC CHIP 1MF	16V
C164	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C165	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C166	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C190	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C191	1-124-246-61	ELECT 6.8MF 20%	35V
C192	1-124-246-61	ELECT 6.8MF 20%	35V
C193	1-163-101-00	CERAMIC CHIP 22PF 5%	50V
C194	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C195	1-163-105-00	CERAMIC CHIP 33PF 5%	50V
C196	1-163-021-00	CERAMIC CHIP 0.01MF	50V
		CONNECTOR	
CN190	1-566-535-11	CONNECTOR, FPC (ZIF) 19P	
CN191	*1-506-467-11	PIN, CONNECTOR 2P	
CN192	*1-506-467-11	PIN, CONNECTOR 2P	
CN193	1-566-530-11	CONNECTOR, FPC (ZIF) 14P	
CN194	*1-565-542-11	PIN, CONNECTOR (PC BOARD) 3P	
		TRIMMER	
CT190	1-141-331-11	CAP, VAR, TRIMMER (CHIP)	
		DIODE	
D160	8-719-404-12	DIODE MA159	
D161	8-719-105-73	DIODE RD4.7M-B2	
D190	8-719-105-99	DIODE RD6.2M-B1	
		IC	
IC190	8-759-142-88	IC UPD7503G-A80-12	
IC191	8-759-937-56	IC S-8054ALB-LM-S	
		TRANSISTOR	
Q160	8-729-905-23	TRANSISTOR 2SA1576R	
Q161	8-729-905-23	TRANSISTOR 2SA1576R	
Q163	8-729-905-23	TRANSISTOR 2SA1576R	
Q164	8-729-905-23	TRANSISTOR 2SA1576R	
Q165	8-729-109-42	TRANSISTOR 2SK94-X2	
Q166	8-729-905-35	TRANSISTOR 2SC4081R	
Q167	8-729-903-97	TRANSISTOR FMS1FE	
Q168	8-729-905-35	TRANSISTOR 2SC4081R	
Q190	8-729-810-19	TRANSISTOR 2SC4396	
Q191	8-729-905-23	TRANSISTOR 2SA1576R	
Q192	8-729-903-97	TRANSISTOR FMS1FE	
		RESISTOR	
R120	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R121	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R122	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R123	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R124	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R125	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R126	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R127	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R128	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R129	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R130	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R131	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R132	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R133	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R134	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R135	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R136	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R137	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R138	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R139	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R140	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
R141	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R142	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R143	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R144	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R145	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
R146	1-218-167-11	METAL GLAZE 330K 1% 1/10W	
R147	1-216-530-00	METAL GLAZE 390K 1% 1/10W	
R148	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R149	1-216-115-00	METAL GLAZE 560K 5% 1/10W	
R160	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R161	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R162	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R163	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R164	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R165	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R166	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R167	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R168	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R169	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R170	1-216-129-00	METAL GLAZE 2.2M 5% 1/10W	
R171	1-216-115-00	METAL GLAZE 560K 5% 1/10W	
R172	1-216-105-00	METAL GLAZE 220K 5% 1/10W	
R173	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R174	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R175	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R176	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R190	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R191	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R192	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R193	1-216-073-00	METAL GLAZE 10K 5% 1/10W	

Ref.No	Part No.	Description	Remark
		TRANSFORMER	
T901	⚠ 1-439-428-11	TRANSFORMER ASSY, FLYBACK	
		THERMISTOR	
TH901	1-807-938-11	THERMISTOR	
**			
	*1-627-911-11	TL-21 BOARD ************	
		DIODE	
D701	8-719-941-34	DIODE GL1HD51	
		RESISTOR	
R701	1-216-037-00	METAL GLAZE 330 5% 1/10W	
**			
	*1-627-912-11	TL-24 BOARD ************	
		DIODE	
D710	8-719-941-34	DIODE GL1HD51	
**			
	*A-7061-278-A	MC-29 BOARD, COMPLETE **********************	
		CAPACITOR	
C585	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
C586	1-124-225-00	ELECT 100MF 20% 6.3V	
C587	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C588	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C589	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C590	1-163-137-00	CERAMIC CHIP 680PF 10% 50V	
C591	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C593	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C594	1-162-638-11	CERAMIC CHIP 1MF 16V	
C595	1-163-081-00	CERAMIC CHIP 0.22MF 25V	
C596	1-124-225-00	ELECT 100MF 20% 6.3V	
C598	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C599	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C600	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C601	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
		CONNECTOR	
CN585	*1-566-196-11	PIN, CONNECTOR (PC BOARD) 3P	
		DIODE	
D585	8-719-105-31	DIODE RD2.7M-B1	

Ref.No	Part No.	Description	Remark
		IC	
IC585	8-759-820-51	IC LA7293M	
		TRANSISTOR	
Q585	8-729-905-37	TRANSISTOR 2SC4081T106Q	
		RESISTOR	
R585	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R586	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R587	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R588	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R589	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R590	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R591	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R592	1-216-095-00	METAL GLAZE 82K 5% 1/10W	
**			
	*A-7070-723-A	SW-93 BOARD, COMPLETE **********************	
		CAPACITOR	
C932	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C933	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
		CONNECTOR	
CN930	*1-566-203-11	PIN, CONNECTOR (PC BOARD) 10P	
CN931	*1-565-542-11	PIN, CONNECTOR (PC BOARD) 3P	
		JACK	
J930	1-565-756-11	JACK, SMALL (REMOTE)	
J931	1-563-367-21	JACK (EARPHONE)	
		COIL	
L932	1-410-369-11	INDUCTOR CHIP 1UH	
L933	1-410-369-11	INDUCTOR CHIP 1UH	
		RESISTOR	
R931	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R932	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R933	1-216-295-00	METAL GLAZE 0 5% 1/10W	
		SWITCH	
S930	1-570-518-11	SWITCH, LEAF (STANDBY)	
S931	1-570-689-11	SWITCH, KEY BOARD (REC, START/STOP)	
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When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No	Part No.	Description	Remark
R194	1-216-109-00	METAL GLAZE 330K 5% 1/10W	
R195	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R196	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R197	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R198	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R199	1-216-073-00	METAL GLAZE 10K 5% 1/10W	

SWITCH

Ref.No	Part No.	Description	Remark
S190	1-570-870-21	SWITCH, SLIDE (AUTO LOCK)	
S191	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (1.2)	
S192	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (∞)	
S195	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (FOCUS)	
S196	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE)(BACK LIGHT)	
S197	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (SHUTTER SPEED)	

TERMINAL PIN

Ref.No	Part No.	Description	Remark
TP190	*1-535-622-11	PIN, TERMINAL	
TP191	*1-535-622-11	PIN, TERMINAL	

CRYSTAL

Ref.No	Part No.	Description	Remark
X190	1-527-997-21	VIBRATOR, CRYSTAL (32.768MHz)	

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*A-7061-321-A VF-20 BOARD, COMPLETE
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Ref.No	Part No.	Description	Remark
	3-713-535-01	CUSHION, CRT	
	*3-725-155-01	INSULATOR, FB	

CAPACITOR

Ref.No	Part No.	Description	Remark
C901	1-126-369-11	ELECT 220MF 20% 6.3V	
C902	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C904	1-127-515-11	ELECT(SOLID) 47MF 20% 6.3V	
C905	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C906	1-163-115-00	CERAMIC CHIP 82PF 5% 50V	
C907	⚠ 1-162-625-11	CERAMIC CHIP 0.0047MF 5% 50V	
C908	⚠ 1-163-015-00	CERAMIC CHIP 0.0033MF 10% 50V	
C909	1-126-193-11	ELECT 1MF 20% 50V	
C911	1-131-388-00	TANTALUM 68MF 10% 3.15V	
C912	1-102-038-00	CERAMIC 0.001MF 99% 500V	
C913	1-163-033-00	CERAMIC CHIP 0.022MF 50V	
C915	1-126-193-11	ELECT 1MF 20% 50V	
C916	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
C917	1-135-166-21	TANTAL. CHIP 47MF 20% 6.3V	
C918	1-162-638-11	CERAMIC CHIP 1MF 16V	
C919	1-135-070-00	TANTAL. CHIP 0.1MF 10% 35V	
C920	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN901	*1-566-195-21	PIN, CONNECTOR (PC BOARD) 2P	
CN902	*1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P	

COMPOSITION CIRCUIT BLOCK

Ref.No	Part No.	Description	Remark
CP901	1-238-119-11	RES, ADJ	

SOCKET

Ref.No	Part No.	Description	Remark
CRT901	1-526-978-21	SOCKET ASSY, CRT	

DIODE

Ref.No	Part No.	Description	Remark
D903	8-719-400-20	DIODE MA152WA	

IC

Ref.No	Part No.	Description	Remark
IC901	8-759-420-01	IC AN2512S	

COIL

Ref.No	Part No.	Description	Remark
L901	1-408-421-00	INDUCTOR 100UH	
L902	1-410-379-21	INDUCTOR CHIP 6.8UH	
L903	⚠ 1-459-858-11	COIL, FERRITE (HLC)	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q903	8-729-106-64	TRANSISTOR 2SD1615	
Q904	8-729-216-32	TRANSISTOR 2SA1163G	

RESISTOR

Ref.No	Part No.	Description	Remark
R902	⚠ 1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R903	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R907	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R908	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R909	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R911	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R912	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R913	1-216-123-11	METAL GLAZE 1.2M 5% 1/10W	
R914	1-216-133-00	METAL GLAZE 3.3M 5% 1/10W	
R915	1-216-133-00	METAL GLAZE 3.3M 5% 1/10W	
R916	1-216-125-00	METAL GLAZE 1.5M 5% 1/10W	
R917	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R919	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R920	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R921	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R922	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R923	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R924	1-216-306-11	METAL GLAZE 3.9 5% 1/10W	
R925	1-216-336-11	METAL GLAZE 47K 1% 1/10W	
R926	1-218-163-11	METAL GLAZE 120K 1% 1/10W	
R928	1-216-870-11	METAL GLAZE 180K 1% 1/10W	
R929	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R930	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R931	1-216-121-00	METAL GLAZE 1M 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV901	1-230-203-00	RES, ADJ, METAL GLAZE 2.2M	

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Ref.No	Part No.	Description	Remark
	*1-627-908-21	MJ-19 BOARD ************	
		CAPACITOR	
C690	1-163-117-00	CERAMIC CHIP 100PF 5%	50V
C691	1-163-021-00	CERAMIC CHIP 0.01MF 10%	50V
		DIODE	
D690	8-719-106-56	DIODE RD10M-B2	
		JACK	
J690	1-563-367-21	JACK (EXT MIC)	
J691	1-565-756-21	JACK, SMALL (EXT MIC DC)	

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	*1-627-910-21	ZM-9 BOARD ***********	
		SWITCH	
S970	1-571-315-11	SWITCH, KEY BOARD (WIDE)	
S971	1-571-315-11	SWITCH, KEY BOARD (TELE)	

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	*A-7070-718-A	FD-9 BOARD, COMPLETE *********************	
	1-808-385-21	L.C.D	
		CONNECTOR	
CN150	*1-566-537-11	CONNECTOR, FPC (NON ZIF) 5P	
		SWITCH	
S150	1-570-909-21	SWITCH, TACTIL(REFLOW TYPE)(ZERO MEMORY)	
S151	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (EDIT SEARCH -)	
S152	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (DATE +)	
S153	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (RESET)	
S154	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (EDIT SEARCH +)	
S155	1-570-910-21	SWITCH, TACTIL(REFLOW TYPE)(TIME (NEXT))	
		TERMINAL PIN	
TP150	*1-535-622-11	PIN, TERMINAL	
TP151	*1-535-622-11	PIN, TERMINAL	

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	*1-627-909-21	EJ-6 BOARD ***********	
		SWITCH	
S169	1-571-102-21	SWITCH, SLIDE (EJECT)	

Ref.No	Part No.	Description	Remark
	*A-7070-721-A	FV-3 BOARD, COMPLETE ********************	
		SWITCH	
S160	1-571-101-11	SWITCH, SLIDE (POWER)	
S161	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (◀▮)	
S162	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (◀▮▮)	
S163	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (▮▮)	
S164	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (◀)	
S165	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (◀◀)	
S166	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (■)	
S167	1-571-102-21	SWITCH, SLIDE (REC ●)	
S168	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (▶▶)	
		TERMINAL PIN	
TP160	*1-535-622-11	PIN, TERMINAL	
TP161	*1-535-622-11	PIN, TERMINAL	

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	*A-7070-722-A	TI-13 BOARD, COMPLETE **********************	
		CONNECTOR	
CN170	*1-566-537-11	CONNECTOR, FPC (NON ZIF) 5P	
		SWITCH	
S170	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (SUPERIMPOSE TITLE 1)	
S171	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (SUPERIMPOSE TITLE 2)	
S172	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (MEMORY)	
S173	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (COLOR)	

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	*1-627-905-21	PA-14 BOARD ************	
		DIODE	
D990	8-719-938-72	DIODE SB01-05CP	
		BATTERY HOLDER	
J990	1-550-104-32	HOLDER, BATTERY	
		COIL	
L990	1-412-026-11	INDUCTOR CHIP 1UH	
L991	1-412-026-11	INDUCTOR CHIP 1UH	
L992	1-412-026-11	INDUCTOR CHIP 1UH	
		IC LINK	
PS990	⚠1-532-841-21	LINK, IC	
PS991	⚠1-532-841-21	LINK, IC	

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

PA-14

SWITCH

Ref.No	Part No.	Description	Remark
S990	1-570-870-21	SWITCH, SLIDE (EDIT)	

CONNECTOR

Ref.No	Part No.	Description	Remark
W991	1-559-927-41	CABLE, FLAT (1.0MM PITCH) 5P	
W992	1-535-658-11	TERMINAL BOARD	

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MISCELLANEOUS
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Ref.No	Part No.	Description	Remark
	1-627-885-11	FP-144 FLEXIBLE BOARD	
	1-627-886-11	FP-145 FLEXIBLE BOARD	
	1-627-900-11	FP-146 FLEXIBLE BOARD	
L951	⚠ 1-451-310-21	DEFLECTION YOKE (B/W)	
V901	⚠ 1-546-065-11	CATHODE-RAY TUBE, B/W	

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ACCESORIES AND PACKING MATERIALS
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Part No.	Description	Remark
1-574-039-11	CORD, CONNECTION	
*3-340-514-01	BAG, PROTECTION	
3-728-508-01	RETAINER, BUCKLE (S)	
3-728-632-01	COVER (L), BATTERY	
3-728-651-01	FRAME (A), PROTECTION	
3-728-652-01	FRAME (B), PROTECTION	
*3-728-654-01	CUSHION (UPPER)	
*3-728-655-01	CUSHION (INNER)	
3-728-659-01	SCREW (2X5), TAPPING	
3-728-667-01	BELT, STRAP	
*3-728-673-01	PAD, UPPER & LOWER	
3-730-801-01	SHEET, INSTRUCTION, CASE ASSY	
3-730-802-01	BRACKET, UPPER LID	
3-730-803-02	BELT, SHOULDER	
3-730-804-01	COVER, CASSETTE	
3-730-805-01	CUSHION (LOWER) (BACK UP)	
3-730-806-01	LID, UPPER	
3-730-807-01	CUSHION (NIGHT-SOIL), INNER	
*3-764-631-12	INSTRUCTION, DEW CONDENSATION	
*3-786-139-41	MANUAL, INSTRUCTION (ENGLISH)	
*3-786-139-51	MANUAL, INSTRUCTION (FRENCH/GERMAN/SPANISH)	
*3-786-139-61	MANUAL, INSTRUCTION (ITALIAN/DUTCH/SWEDISH)	
*3-891-025-01	BAG, PROTECTION	

ACCESORIES AND PACKING MATERIALS (KIT)

Part No.	Description	Remark
1-571-164-41	SWITCH, ANTENNA CHARGE (CABLE) (ANS-89E)	
3-712-595-13	BELT, SHOULDER	
3-712-673-01	SCREWDRIVER	
*3-728-677-12	INDIVIDUAL CARTON	
** AC-V30	AC POWER ADAPTOR	
*** RFU-89EA	RF MODULATER	
*** NP-55	RECHARGABLE BATTERY	

** MARK PARTS IS AVAILABLE FOR REPAIR SERVICE
*** MARK PARTS IS AVAILABLE AS A OPTIONAL ACCESORIES

****

HARDWARE LIST

SCREW

Part No.	Description
7-621-255-15	SCREW +P 2X3
7-621-255-45	SCREW +P 2X6
7-621-281-15	SCREW +P 2X2
7-621-772-00	SCREW +B 2X3
7-627-452-37	SCREW, PRECISION +K 2X5 TYPE1
7-627-850-17	SCREW, PRECISION +P 1.4X2.5
7-627-552-07	SCREW, PRECISION +P 1.7X2.5
7-627-852-18	SCREW, PRECISION +P 1.7X4 TYPE3
7-627-852-38	SCREW, PRECISION +P 1.7X1.8 TYPE3
7-627-553-37	PRECISION SCREW +P 2X3 TYPE 3
7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT
7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT
7-685-203-19	SCREW +KTP 2X5 TYPE2 NON-SLIT
7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S

STOP RING

Part No.	Description
7-624-101-01	STOP RING 1.2 (E TYPE)
7-624-102-04	STOP RING 1.5, TYPE -E

TAPPING

Part No.	Description
7-685-105-19	TPG +P 2X8, TYPE 2, NON-SLIT

When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

9-972-707-11

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Personal Video Group

English
8810452-1
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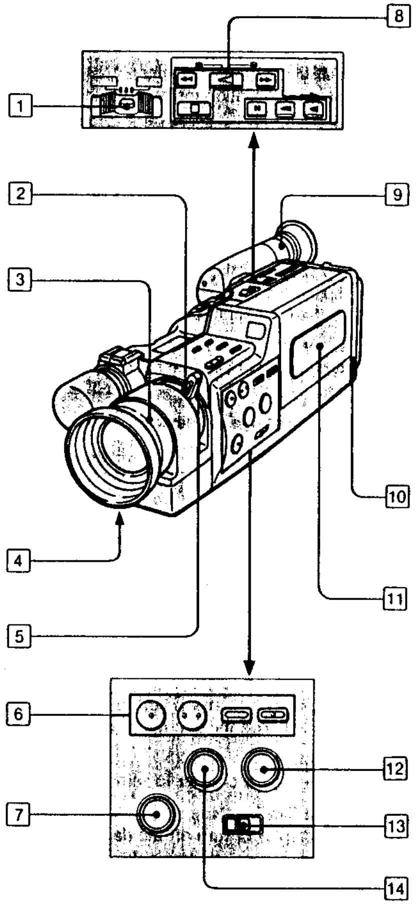
1-1. LOCATION AND FUNCTION OF PARTS AND CONTROLS

A-1



For details on the use of each control, refer to the pages indicated in the circle.

A-1

1 **POWER switch**
CAMERA: For camera recording
PLAYER: For playing back or editing tapes
OFF: Power off

2 **Macro set button ●**

3 **Focus ring ●**

4 **START/STOP button**
Used for low angle recording.

5 **Zoom lever ●**

6 **SUPERIMPOSE buttons ●**
Used to record the title.
TITLE 1 button
TITLE 2 button
MEM (memory) button
COLOR button

7 **BACK LIGHT button ●**

8 **Tape transport buttons**
◀ (playback)
◀◀ FF (fast forward)
▶▶ REW (rewind)
■ (stop)
❚❚ (pause)
◀❚❚ (frame-by-frame)
◀❚ (slow)

9 **Viewfinder ●**
The picture being recorded or played back can be monitored in monochrome here. Also, data such as caution indicators and function mode are displayed on the viewfinder screen.

10 **BATT (battery eject) knob ●**

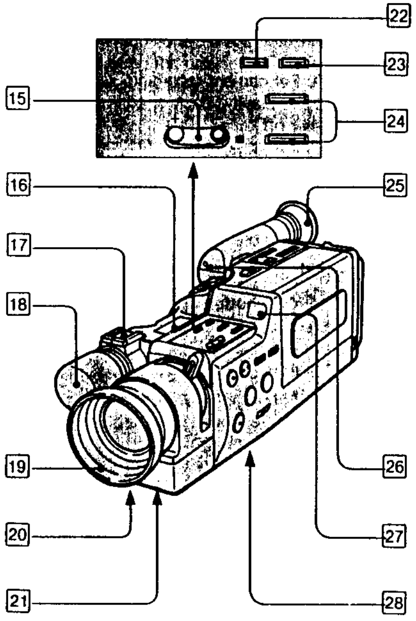
11 **Cassette holder**

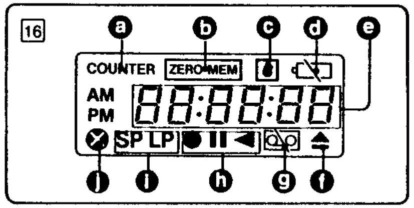
12 **SHUTTER SPEED button ●**
Used to select the shutter speed.

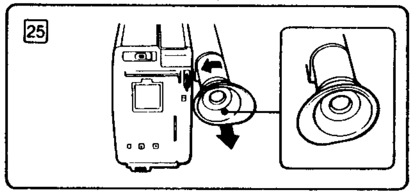
13 **AUTO LOCK switch**
Normally set to the left AUTO LOCK position.

14 **FOCUS button ●**
Used for manual focusing.

A-2







A-2

15 **EDITSEARCH button ●**

16 **Display window ●**
ⓐ COUNTER indicator
ⓑ ZERO MEM (memory) indicator
ⓒ Moisture condensation inside the unit.
ⓓ Blinks when the battery is weak.
ⓔ Indicates the time, date, or the tape counter.
ⓕ Blinks when moisture has condensed on the tape, when the tape approaches its end during camera recording.
ⓖ Lights steadily when no cassette is inserted. Blinks when the tape approaches its end.
ⓗ Tape operation mode indicators
ⓘ Tape speed indicator
ⓙ Lights when the slit in the head is clogged.

17 **Accessory shoe**
Attach an optional external microphone, video light, etc.

18 **Built-in microphone (monaural)**

19 **Lens hood**

20 **Infrared beam detector**
The infrared beam reflected from the object to be shot is received here during auto focusing. Do not cover here.

21 **Infrared beam emitter**
Transmits an infrared beam toward the object to be shot during auto focusing. Do not look into it for a long time when recording with auto focusing. Do not cover here.

22 **ZERO MEM (zero memory) button**
Used to memorize the counter zero point.

23 **RESET button**
Press to reset the counter to zero.

24 **DATE and TIME buttons ●**
Press to display or turn off the date or time.

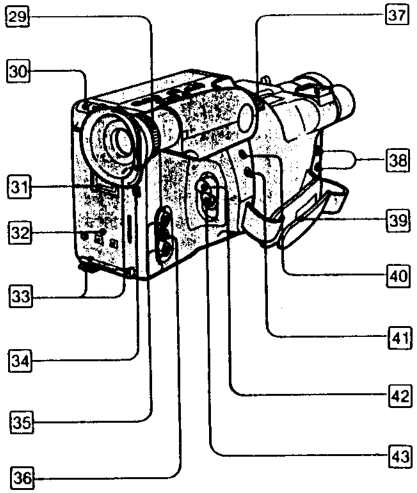
25 **Eyecup**
The eyecup is attached for the right eye.
For the left eye, detach the eyecup holder and attach it as illustrated.

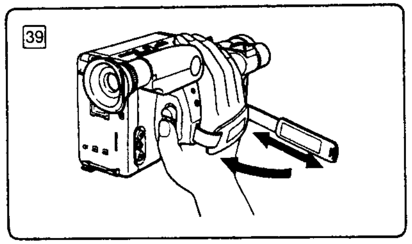
26 **Camera recording/battery lamp**
Lights during camera recording. It blinks when the battery is exhausted.

27 **White balance sensor**
This is the sensor for auto white balance adjustment.
During recording, do not cover the sensor.

28 **Tripod receptacle**

A-3





A-3

29 **Viewfinder lens adjustment ring**
Adjust to your eyesight to assure good focus. Be sure to adjust this ring when shooting for the first time.

30 **Cassette eject button**

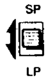
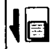
31 **Lithium battery compartment ●**

32 **Battery mounting surface**

33 **Hooks for shoulder strap**

- Attach a shoulder strap.

34 **REC MODE (recording mode)/EDIT switch**
Switch it depending on the operating mode.

Mode	Recording	Playback	Editing
Setting	SP  LP	 EDIT	 EDIT
Function	REC MODE switch	EDIT switch	

35 **VIDEO/AUDIO OUT (output) jacks (phono jacks)**

36 **RFU DC OUT (RFU adaptor DC output) jack (special minijack)**
Supplies power to the RFU-89EA/ASA RFU adaptor.

37 **Power zoom button ●**

38 **MIC jack and DC OUT (microphone power output) jack**
Connect an external microphone.
The MIC jack accepts Sony "plug-in-power" microphones and supplies power to them.

39 **Grip strap**
Adjust the length so that your thumb can easily manipulate the START/STOP button.

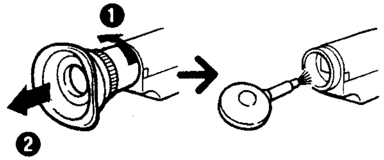
40 **REMOTE connector (stereo mini-minijack)**

41 **◎ (earphone) jack (minijack)**

42 **STANDBY switch**
Slide up to set the unit to recording pause mode.

43 **START/STOP button**
Press to start and stop camera recording.

A-4



1-2. POWER SOURCES

Selection of Power Sources

This manual shows the operations on one of the following power sources.

		Power source	Accessory to be used
Place	Indoors	House current	AC power adaptor AC-V30 (supplied) or AC-V55 (page 9)
	Outdoors	Battery pack	Battery pack NP-55 or NP-77 (page 8)
	In the car	12 V or 24 V car battery	AC power adaptor AC-V55 and car battery cord DCC-16AE (page 9)

Notes on power source

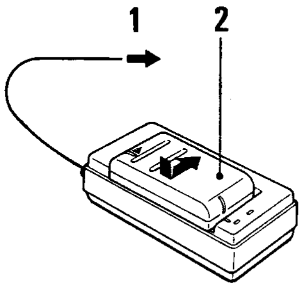
- Disconnecting the power source or removing the battery pack during recording or playback may damage the inserted cassette tape. If this is done by accident, supply the power again immediately and turn on the power switch.
- Be careful not to let any metal object touched on the metal part on the battery pack or AC power adaptor. When the battery pack is not being used, keep it in its case.

Optional Accessories for Charging

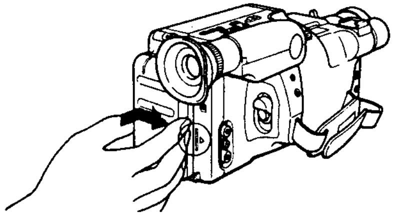
- **AC-V55 AC power adaptor**
  Two battery packs can be charged simultaneously.
- **BCA-70 or BCA-80 battery charge adaptor, ACP-88 AC pack and NPA-55 battery adaptor**
  For charging, insert an NP-55 into the NPA-55.

To remove dust from inside the viewfinder A-4
Detach the eyecup as illustrated and clean the surface of the Braun tube with a blower.

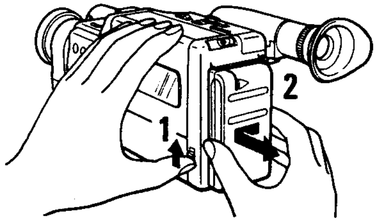
B-1



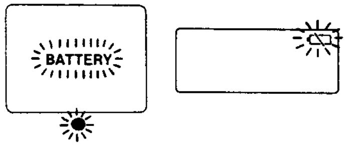
B-2



B-3



B-4



Battery Pack — NP-55 or NP-77

First, charge the battery pack B-1
Use the supplied AC-V30 AC power adaptor. The charging time is about 1 hour for an NP-55 battery pack, or about 2 hours for an NP-77 battery pack.

1 Connect the AC-V30 to a wall outlet.
2 Attach the battery pack to the AC-V30. Align the grooves on the battery pack with those on the AC-V30, and while pressing the battery pack slide it as illustrated.

To attach the battery pack to the video camera recorder B-2
Align the right side of battery pack with the white line on the recorder, and while pressing the battery pack, slide it to the right. Make sure that the battery is fitted completely to the mounting surface. Imperfect fit may damage the projections on the recorder.

To remove the battery pack B-3
While pressing the BATT knob in the arrow direction, slide and pull out the battery pack as illustrated.

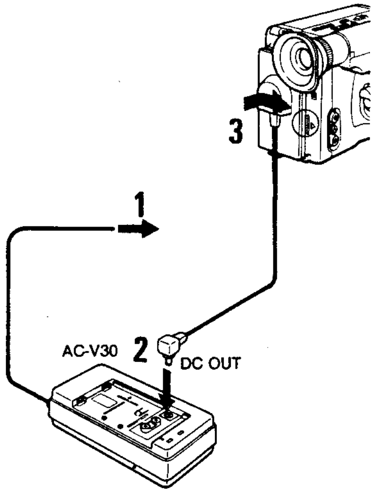
Battery life
A fully-charged NP-55 battery pack provides approximately 40 minutes of continuous camera recording, and an NP-77 provides approximately 80 minutes of continuous camera recording.

Notes
- The video camera recorder consumes power even in the recording pause mode. When recording short scenes using the recording pause mode, the battery life is less than half that of continuous recording.
  When recording is not to be started soon, turn off the power with the STANDBY switch.
- If the battery pack is not fully charged or if it is used in a cold place, its operating time is also shortened.

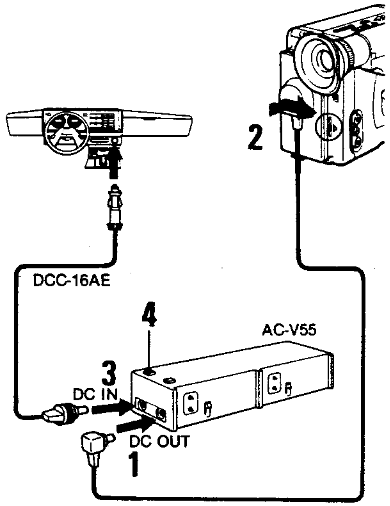
When the video camera recorder is not in use, remove the battery pack.
If the battery is installed, even if the POWER switch is set to OFF, a very small amount of electric current flows.

When the battery becomes weak B-4
The BATTERY indication and red lamp blink in the viewfinder and the 🔋 indication blinks in the display window.
Replace the battery pack with the fully charged one.

B-5



B-6



Using the NP-22 battery pack
A fully-charged NP-22 battery pack can operate this unit for approximately 60 minutes. For using the NP-22, an optional NPA-22 battery adaptor is necessary.

House Current — Using AC Power Adaptor B-5

1 Connect the AC power adaptor to a wall outlet.
2 Insert the connecting cord supplied with the AC-V30 AC power adaptor into the DC OUT jack on the AC power adaptor.
3 Align the right side of the connecting plate with the white line on the recorder, and while pressing the connecting plate, slide it to the right.

To remove the connecting plate for the AC power adaptor from the video camera recorder
While pressing the BATT knob on the recorder, slide and pull out the connecting plate.

The optional AC-V55 AC power adaptor can also be used to operate this recorder on house current.

Car Battery B-6

Use the DCC-16AE car battery cord and the AC-V55 AC power adaptor.

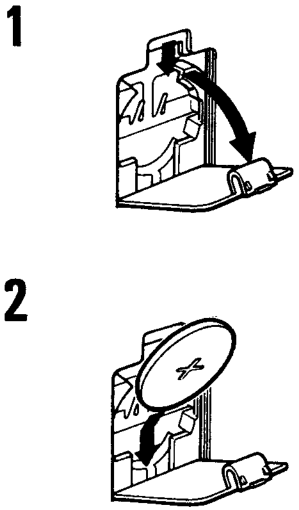
1 Insert the connecting cord supplied with the AC-V55 into the DC OUT jack on the AC-V55.
2 Align the right side of the connecting plate with the white line on the recorder, and while pressing the connecting plate, slide it to the right.
3 Connect the DCC-16AE car battery cord to the DC IN jack on the AC-V55 and to the cigarette lighter socket of a car (12 V or 24 V).
4 Press the POWER switch on the AC-V55.

After using, press the POWER switch on the adaptor again.

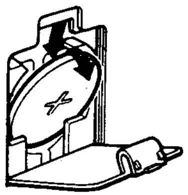
To remove the connecting plate from the video camera recorder
While pressing the BATT knob on the recorder, slide and pull out the connecting plate.

The optional DCP-55 DC pack (supplied with a car battery cord) can also be used to operate this recorder on a 12V or 24V car battery.

C-1



C-2



Lithium Battery C-1

To insert the lithium battery
This unit uses a lithium battery to activate the clock and to keep a title in memory. Before operating the unit for the first time, install the supplied lithium battery:

1 Open the cover of the lithium battery compartment on the battery mounting surface.
2 Install the supplied CR2025 lithium battery with the ⊕ side facing out.
3 Close the cover.

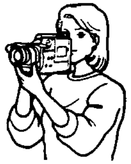
To remove the lithium battery C-2
Press the side of the battery in the direction as indicated for installation.

Lithium battery life
Approximately 1 year in normal operation.
When the lithium battery becomes weak, the time indication will blink on the viewfinder screen for about 7 seconds.
In this case, replace the battery with a Sony CR2025.

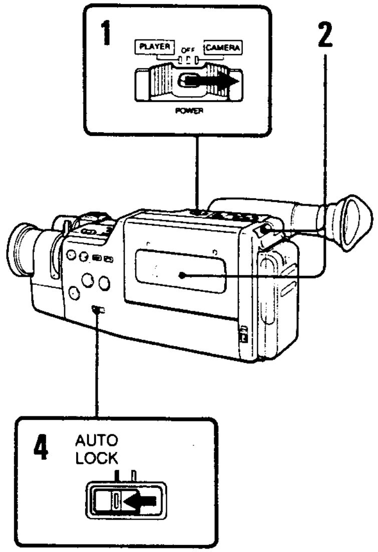
Notes on lithium battery
- Keep the lithium battery out of the reach of children. Should the battery be swallowed, immediately consult a doctor.
- Wipe the battery with a dry cloth to assure a good contact.
- Be sure to observe the correct polarity when installing the battery.
- Do not hold the battery with metallic tweezers, otherwise a short-circuit may occur.
- Do not break up the battery nor throw it into a fire, which might cause it to explode. Carefully dispose of the used batteries.

1-3. EASY CAMERA RECORDING WITH AUTOMATIC ADJUSTMENT

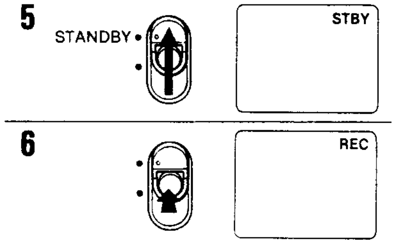
F-1



F-2



F-3



How to Record

Hold the camera recorder as in the illustration.
If your nose touches the recorder, adjust the angle of the viewfinder. F-1

F-2
1 While pressing the small button, set the POWER switch to CAMERA.
2 Insert the cassette.
3 Set the REC MODE/EDIT switch to LP or SP, according to the length of the programme to be recorded.
The recording time of a cassette in the LP mode is twice as long as that in the SP mode.
4 Set the AUTO LOCK switch to AUTO LOCK.
5 Slide the STANDBY switch up. F-3
The unit will enter the recording pause mode.
6 Press the START/STOP button.
Recording will start.

Check on the viewfinder screen
STBY: Displayed during recording pause mode.
REC: Displayed during recording.

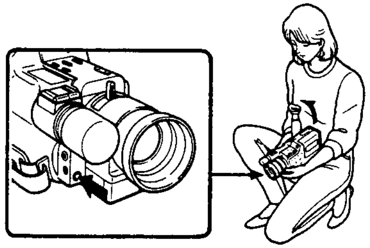
To stop recording
Press the START/STOP button again.
The unit will enter the recording pause mode.
Avoid rough handling or mechanical shock to the unit. A smooth transition between scenes may not be made.

To check the last portion of the previous recording
1 Set the recorder in recording pause mode by pressing the START/STOP button.
2 Press the – EDITSEARCH button momentarily.
The last few seconds of the recorded portion are rewound and then the recorded picture is monitored on the viewfinder screen. The unit then enters the recording pause mode.

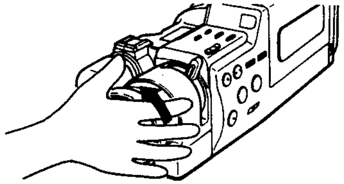
If the picture has not been recorded
The video head may be contaminated. Clean the heads using the Sony V8-25CL video head cleaning cassette.

After using
Slide the STANDBY switch down and set the POWER switch to OFF. (You need not press the center button when setting the switch to OFF.)

F-4



F-5



F-4

For low angle recording

The viewfinder can be turned 90 degrees up.

1 Slide the STANDBY switch up.
2 Press the START/STOP button on the front.

When attaching the lens hood, filter or conversion lens, hold the focus ring.

When removing, press it with the palm of your hand and turn it counterclockwise. F-5

Note on power source

If the POWER switch is moved during recording, the tape will stop.

Notes on light sources

- Should you shoot a subject in bright conditions such as sunlight just after shooting in a dark place, the picture may not appear on the viewfinder screen. In this case, move the camera away from the subject to resume the normal condition.
- A vertical band may appear when a subject such as a candle flame or a light is shot against a dark background.

Notes on playback on another VTR

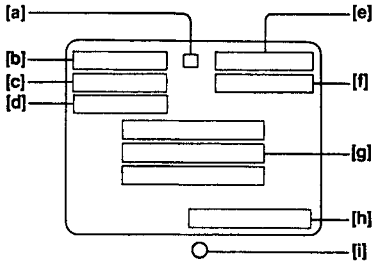
- To view the picture which has been recorded on this unit, set the monitor switch of the recorder for playback to the STD (standard) position.
- When recording on this unit using a tape on which PCM stereo sound has previously been recorded, set the monitor switch of the video cassette recorder for playback to the STD (standard) position. Otherwise, the sound may not be heard or may be distorted.

Notes on automatic adjustment

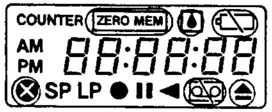
- During recording, do not cover the white balance sensor.
- During recording with auto focusing, do not turn or stop the focus ring forcibly.
- Keep the lens and the white balance sensor clean.

Under certain conditions, auto focusing will not operate properly (see page 10).

F-6



F-7



Indications inside the Viewfinder and in the Display Window F-6 F-7

[a] **White mark**
The FOCUS switch has been set to the manual condition.

[b] **Shutter speed** (see page 11.)

[c] **Title colour** (see page 14.)

[d] **BACK LIGHT**
The BACK LIGHT button has been pressed (see page 11.)

[e] **STBY**
Recording is momentarily stopped (recording pause mode).
REC
Recording is going on.

[f] **ZERO MEM**
The ZERO MEM button has been pressed.

[g] **BATTERY**
Weak battery.
CAUTION
The unit cannot function normally.
DEW
Moisture condensation inside the unit.

CASSETTE
No cassette has been inserted or the safety tab of the inserted cassette is slid out.
TAPE END
The tape is at its end.

[h] **Date or time** (see page 13.)

[i] **Camera recording/battery lamp**
Lights during camera recording. It blinks when the battery is exhausted.

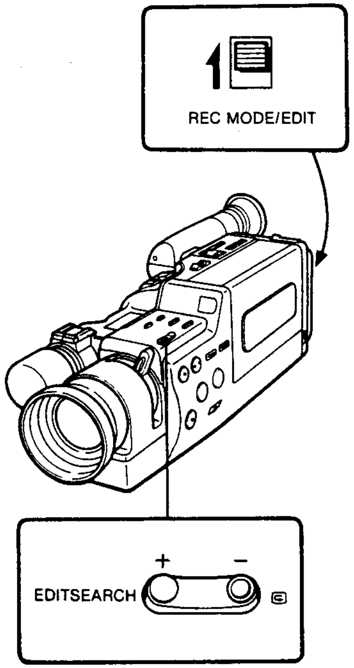
Indicators for caution

Display window F-7	Inside the viewfinder F-6
🪫	BATTERY
📼	TAPE END
⏏	CASSETTE
💧	DEW
⊗	CAUTION

Indicators for the setting of the switch

Display window F-7	Inside the viewfinder F-6
	BACK LIGHT
ZERO MEM	ZERO MEM
	■

F-8



Instant Playback on the Spot F-8

You can monitor the picture just recorded on the viewfinder screen.

1. While pressing the small button, set the POWER switch to CAMERA.
2. Slide the STANDBY switch up.
3. Set the REC MODE/EDIT switch to the upper position.
4. Press the "−" side of the EDITSEARCH button to view the playback picture in reverse.
5. Press the "+" side of the EDITSEARCH button to view the playback picture.

To resume recording in the LP mode, slide the REC MODE/EDIT switch down.

During Recording, to Record Again on the Previous Recorded Portion

1. Slide the STANDBY switch up.
2. Set the REC MODE/EDIT switch to the upper position.
3. Locate the point from which the recording is to begin again by monitoring the picture on the viewfinder screen.
   - ❶ Press the "+" side of the EDITSEARCH button to advance the picture at a normal playback speed, or the "−" side to reverse the picture.
   - ❷ At the desired point, release the EDITSEARCH button. The unit will be set to recording pause mode.
4. Set the REC MODE/EDIT switch to the previous recording mode.
5. Press the START/STOP button to start recording.

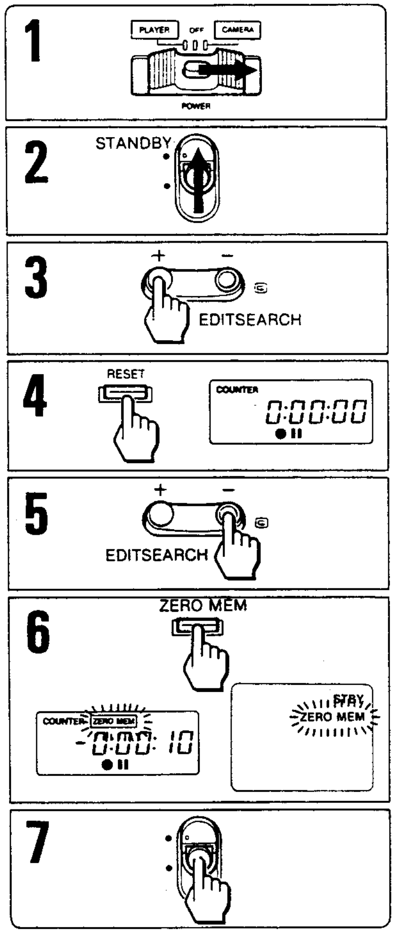
Smooth recording can be made even if the recording is stopped and started again, or even if the power is turned off and on again, provided that the cassette is not removed. But, if the cassette has been removed, proceed as above.

1-4. INSERT RECORDING

• Using EDITSEARCH button

G-1

G-2



You can insert (record) video and audio simultaneously from the camera onto any recorded tape. G-1

Operation G-2

- Monitor the picture being inserted on the viewfinder screen.
- Select the same tape speed as was used for already recorded portion with the REC MODE/EDIT switch.

1. While pressing the small button, set the POWER switch to CAMERA.
2. Slide the STANDBY switch up to set the unit to recording pause mode.
3. Keep pressing the "+" or "−" side of the EDITSEARCH button and release the button at the point where the insert should **end.** The unit will be set to recording pause mode.
4. Display the counter in the display window and press the RESET button. The counter is reset to zero. (For an accurate ending point, press the RESET button immediately after the EDITSEARCH button is released and while the still picture is displayed.)
5. Keep pressing the "−" side of the EDITSEARCH button and release the button at the point where the insert should **begin.**
6. Press the ZERO MEM button. The insert ending point is stored in memory.
7. Press the START/STOP button. Insert recording will begin.

The insert recording will stop automatically near the counter zero point.

To cancel ZERO MEM mode
Press the ZERO MEM button so that the ZERO MEM indicator disappears.

To insert the date or time
Follow steps 1 through 6 above, press the DATE or TIME button to display the date or time indication on the viewfinder screen and then press the START/STOP button.

Notes on ZERO MEM Mode
ZERO MEM mode is cancelled automatically in the following cases.

- When an insert recording is completed.
- When the position of the POWER switch is changed.
- When the power is turned off.
- When the cassette is ejected.

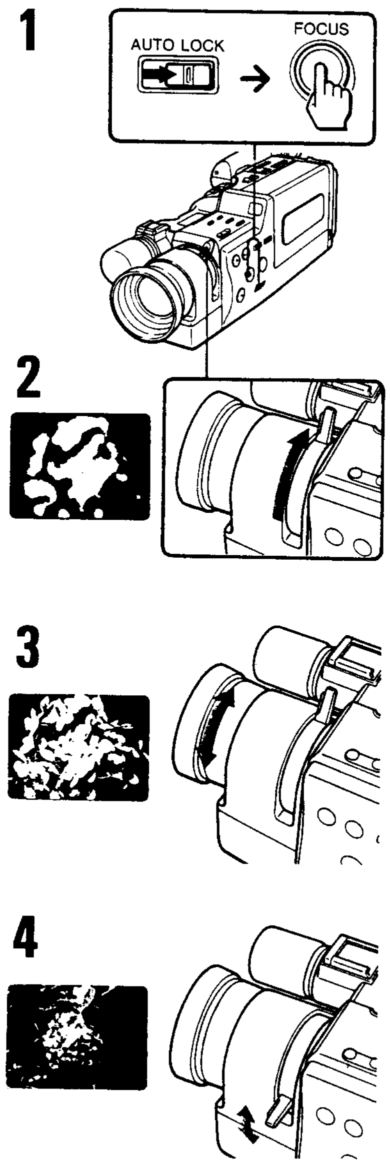
To restore it, press the ZERO MEM button again.

Notes

- When recording pause mode lasts for approximately 5 minutes, pause mode will be automatically released and the unit will be set to stop mode.
- When the inserted tape is played back, the picture may be distorted at the end of the inserted program.

1-5. MANUAL FOCUSING

H-1



Use manual focusing when shooting subjects difficult to focus automatically (listed on page 20).

H-1

1 Set the AUTO LOCK switch to the right and press the FOCUS button.
2 Turn the manual zoom lever to the telephoto position (54) to make the subject as large as possible in the viewfinder.
3 Turn the focus ring to achieve sharp focus.
4 Set the desired shot length using the manual zoom lever.

Some helpful hints

- When shooting a scene with lots of movement in bright light, the subject can be kept in good focus by setting the zoom lever to the wide-angle position and the focus ring to 2 m, regardless of the distance between the subject and the recorder.
- When shooting in low light situations such as indoors, the depth of field in proper focus is very shallow. For best results, shoot at wide angles, after focusing in telephoto.
- The figures on the focus ring indicate the distance between the subject and the lens surface.
- Recommended illumination of this unit is more than 300 lux (28 footcandles). If shooting is done indoors or under other circumstances where light is insufficient, video lights must be used for best results. Under adequate light condition, the depth of field in proper focus is wider and a sharper picture will be recorded.

Poor Conditions for Auto Focusing H-2

To shoot subjects listed below you must use manual focusing.

[a] **Black objects which absorb the infrared beam**
Ex. dark curtains or shade

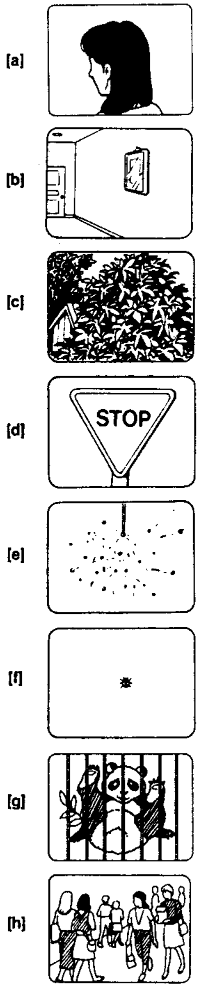
[b] **Objects in which the infrared reflection disperses**
Ex. a smooth slanting surface (Auto focusing functions when the camera is aimed squarely at the subject.)

[c] **Objects in which the infrared reflection is not sufficient**
Ex. bushes, grass or plants in the telephoto position

[d] **Objects in which the infrared beam is reflected too much**
Ex. traffic signs, a white wall, a mirror, or a subject through plate glass

[e] **Objects not solid**
Ex. fireworks, candle flame or smoke

H-2



[f] **Exteremely small objects which do not cover more than 1/10 of the viewfinder's area**
Ex. insects

[g] **When there are other objects between the shooting object**
Ex. an animal inside a cage or baby inside a cot

[h] **Moving objects**
Ex. a crowd or sports with lots of movement

- **Objects which emit infrared beams themselves**
  Ex. automatic doors or fluorescent lights

- **Objects 10–60 meters (33–200 feet) away from the recorder**

Other Uses of Manual Focusing

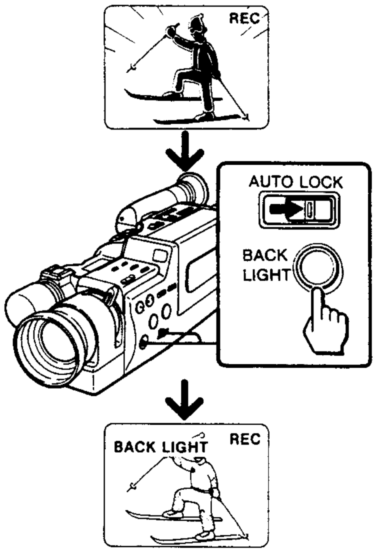
- When using special effects lenses or filters
- When shooting still subjects on a tripod
- To save battery wear
  (When the AUTO LOCK switch is set to AUTO LOCK, the auto focusing operates to move the focus ring automatically even in recording pause mode. This causes the battery to wear continuously.)
- For focusing in close-up shooting, see page 12.

Auto focusing system of this camera recorder
This recorder adjusts focus automatically by emitting an infrared beam at the objects to be shot and then detecting the reflected beam. When the subject is approximately 3 meters away from the camera recorder, the focus is sharpest in the center of the screen. The camera recorder has the tendency, however, to focus a bit lower to the right when the subject is within 3 meters, and a bit higher to the left when the subject is more than 3 meters away.

Note
As the auto focusing of this camera recorder utilizes an infrared beam, it might malfunction when you use the camera recorder near another equipment that also emits an infrared beam such as a TV or VTR remote commander, or another camera recorder that uses an infrared beam for auto focusing.
It might also cause malfunctioning of such equipment.

1-6. BACK LIGHT ADJUSTMENT I

I



This unit adjusts the iris automatically. However, when shooting a subject that is backlit, set the AUTO LOCK switch to the right and press the BACK LIGHT button.

The BACK LIGHT Indication appears when the BACK LIGHT button has been pressed.

After shooting that particular scene, be sure to press the BACK LIGHT button again to release it. Otherwise the recorded picture will be too bright.

The BACK LIGHT indication goes out.

Note

The function will be released once the POWER switch is set to OFF.

Automatic White Balance Function

The automatic white balance function allows the unit to record an image with natural color tones in most kinds of light.
This insures that white will always recorded as white regardless of the light source.

Notes

- The auto white balance may not function under the following conditions.
  - Insufficient light
  - When lighting conditions change rapidly
  - When the camera is in a different light condition from the recorded subject
    ex. when the subject is under a spotlight when the subject is outdoors and the camera is indoors
  - Special light sources such as a natrium lamp
- Do not cover the white balance sensor.

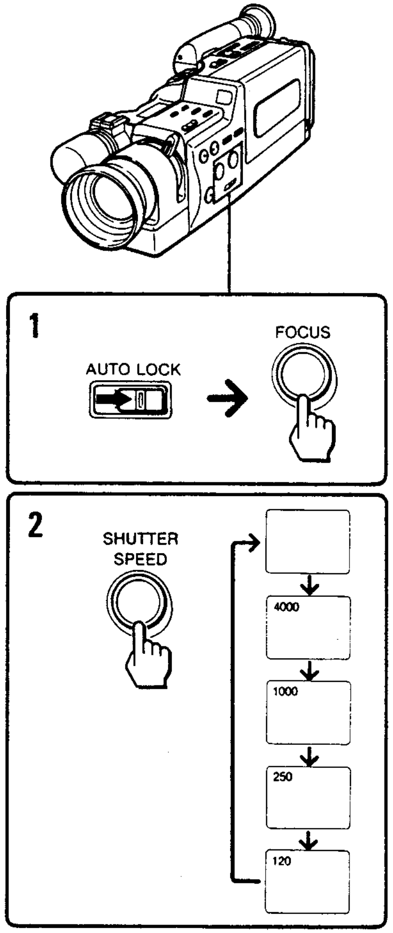
1-7. SHUTTER SPEED ADJUSTMENT

J-1

J-2

When a fast-moving subject is recorded at a normal shutter speed, its still picture may not be seen when played back J-1 . This can be improved by increasing the shutter speed J-2 . The shutter speed of this unit can be selected from five speeds, 1/60 (normal speed), 1/4000, 1/1000, 1/250, 1/120.
However, when the shutter moves fast, it will not allow enough light to come into the lens, so the picture will be dark. Therefore, when recording at a high shutter speed, record in a brighter place than usual.
Choose an appropriate shutter speed according to the place and situation.
See the chart below for examples.

J-3



Example use	Recommended shutter speed
• On clear days, recording golf or tennis scenes (To view the hit ball clearly in the pause mode, set to 1/4000) • Recording the skiers	1/4000 or 1/1000
• On overcast days, recording a moving merry-go-round or jet-coaster • Recording outdoors from inside a vehicle (for stable shooting)	1/250
• Instead of the ND2 filter (To reduce the exposure level to approx. 1/2) • Recording indoors (for stable shooting)	1/120

J-3

1. Set the AUTO LOCK switch to the right and press the FOCUS button.
2. Press the SHUTTER SPEED button repeatedly until the desired shutter speed indication appears on the viewfinder screen.
   Each time the SHUTTER SPEED button is pressed, the indication changes:
   No indication → 4000 → 1000 → 250 → 120
   (1/60) (1/4000) (1/1000) (1/250) (1/120)

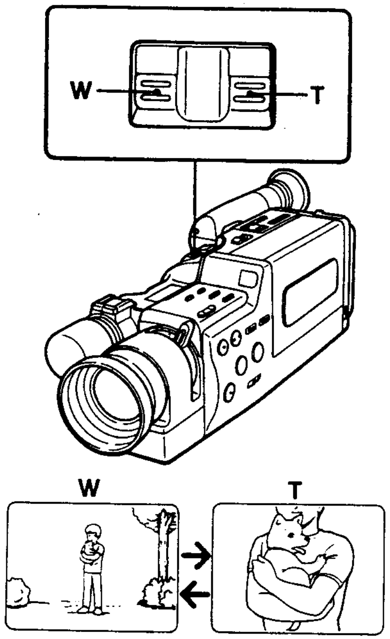
Auto focus will not function is this case.
When shooting, use manual focusing.

Notes

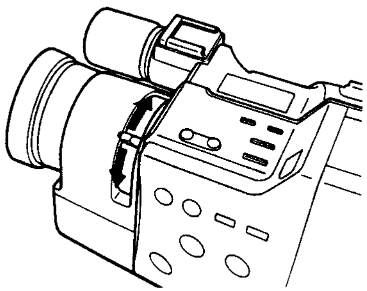
- When shutter speed 1/250 or more is selected, recording must be done under sunlight or video light.
- When the recording is done under a light discharged tube, such as a fluorescent lamp, sodium lamp, or mercury lamp, the brightness of the recorded picture may vary ("flicker").
  If flickers of fluorescent lamps affect the recording in 50 Hz areas, set the shutter speed to 1/120.
- When the shutter speed is changed during a camera recording of a TV screen, the brightness of the recorded picture may vary.
- When a very bright object is shot at a faster shutter speed, a light, vertical, belt-like line ("smear") may appear on the screen.

1-8. ZOOMING

K-1



K-2



The size of the subject in the scene can be changed.

Power Zoom K-1

— for smooth and constant zooming

Press the T side of the power zoom button for telephoto and the W side for wide-angle.
The zoom ring will move automatically.

Manual Zoom K-2

— to create a dramatic effect

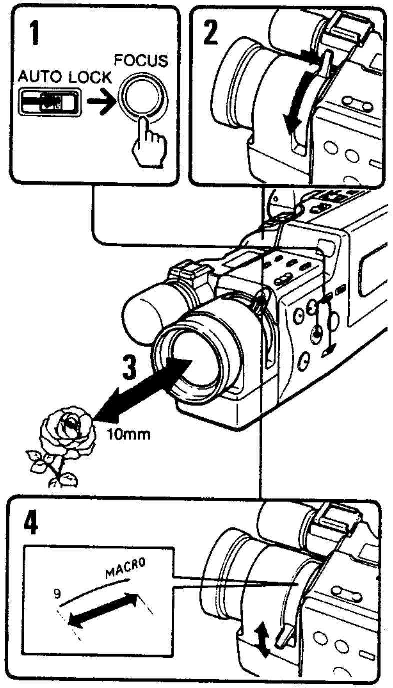
Turn the manual zoom lever upward for telephoto and downward for wide-angle.

For more zooming effect

- Use an optional conversion lens (VCL-1546A or VCL-0746A).
  Auto focus, however, will not function in that case.
- The focal length of this unit is 9 mm to 54 mm. Converted into the focal length of a 35 mm camera, this means approximately F-48 mm to 288 mm.

1-9. CLOSE-UPS (MACRO) L

L



Even tiny objects can literally fill the screen for dramatic close-up effects.
Remove the lens hood before operation.

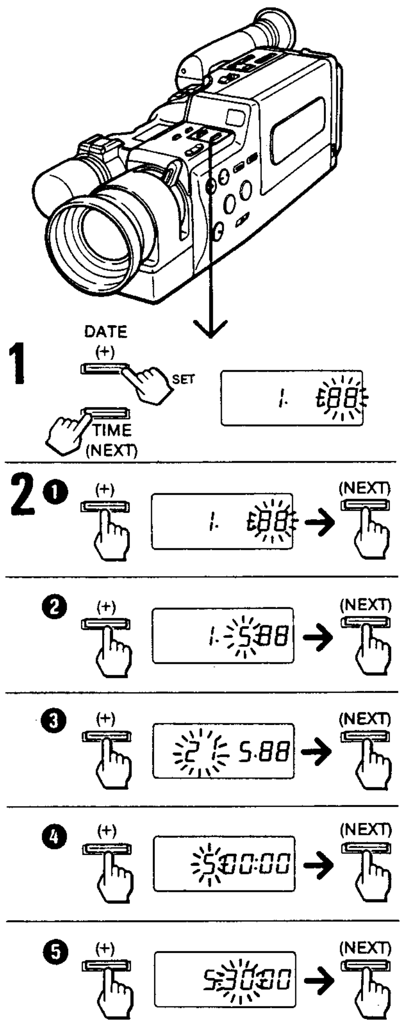
1 Set the AUTO LOCK switch to the right and press the FOCUS button.
2 Turn the zoom lever to the MACRO position, pressing the orange macro set button.
3 Bring the recorder as close as necessary to obtain the desired subject size.
The subject can be as close as approximately 10 mm ($^{13}/_{32}$ in.) from the lens surface.
4 Turn the zoom lever within the MACRO range in orange to focus sharply.

Notes

- Auto focusing does not function properly in macro shooting.
- If the subject is closer than 10 mm, it cannot be brought into focus.
- When shooting in macro, the depth of field is very shallow, so pay attention to focus. To keep the subject in focus, use a tripod or monopod.
- Zooming is not possible during macro recording. To change the size of the subject, move the camera recorder closer or further away.

1-10. RECORDING DATE OR TIME

M-1



Once the date and the current time are adjusted, the date or time can be recorded together with the picture.

Before setting the date and time, make sure that the battery pack and lithium battery are installed.

To Set Date and Time M-1

1 Press the DATE and TIME buttons simultaneously **for more than 3 seconds.** The date indication will appear in the display window (date/time setting mode). The DATE button now functions as the + button and the TIME button functions as the NEXT button.

2 Adjust the ❶ year, ❷ month, ❸ day, ❹ hour and ❺ minute in sequence, following the illustration. First adjust the blinking digits with the + button, and then press the NEXT button. After adjusting the minute digits, press the NEXT button at the same time with an announced time signal.

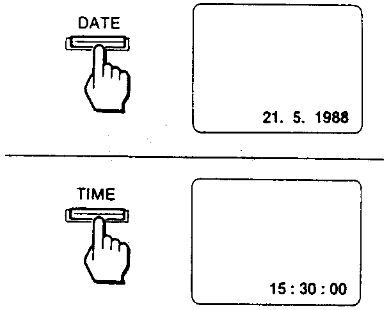
The clock starts operating. There is no need to readjust the date and time as long as the lithium battery remains.

To clear the time indication from the display
Press the TIME (NEXT) button again.

The + button can be pressed in two ways

- When you keep the button pressed, the digits will advance continuously.
- When you press and immediately release the button, the digits will advance by one.

M-2



To check the preset date and time
Press the DATE or TIME button in the recording pause mode. When the same button is pressed again, the indication goes off.

To readjust an incorrect date or time
Set the unit to date/time setting mode and press the NEXT button repeatedly until the incorrect digit blinks. Correct it with the + button and press the NEXT button. After adjusting the minute digits, press the NEXT button at the same time with an anounced time signal.

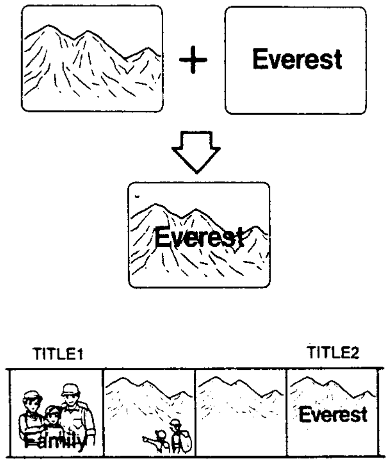
To Record the Date or Time M-2

During camera recording or in recording pause mode, press the DATE or TIME button to display the date or time on the viewfinder screen. The date or time being displayed will be recorded together with the picture.

To stop recording the date or time
Press the DATE or TIME button again. The picture recording will continue.

1-11. RECORDING A TITLE

N-1



Before recording, memorize a title or figure. The memorized title or figure is superimposed onto the picture being recorded. N-1

- Two kinds of titles or figures can be memorized.
- The color of the title or figure can be selected from 8 colors.

Preparations

To make a desired title card
Use a white and plane card and draw the title on it with a deep color (black is recommended for the best result) in thick letters.
If contrast is clear, a signboard can be memorized like the title card.

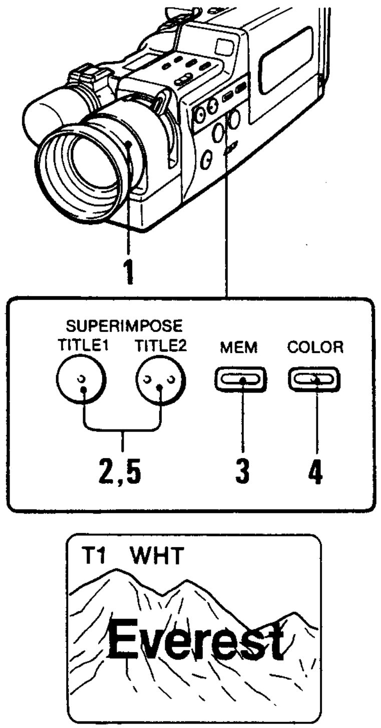
Before memorizing the title

1 Make sure that the lithium battery is installed. See page 7.
2 While pressing the small button, set the POWER switch to CAMERA.
3 Slide up the STANDBY switch to set the unit in the recording pause mode.

Notes

- When deciding the title size, check the effective picture size on your video monitor.
- To record the title, fix the title card and the video camera recorder.
- To memorize a title, use of an appropriate light is recommended for a better result.

N-2



To Memorize the Title N-2

1 Point the camera to the title card and adjust the focus.
2 Press the TITLE 1 or 2 button.
3 Press the MEM button to memorize the title.
4 Select the title colour while observing the colour indication in the viewfinder. Each push on the COLOR button cyclically changes the colour, as follows:

WHT (white) → BLUE → GRN (green) → CYAN
↑ ↓
BLK (black) ← YEL (yellow) ← VIO (violet) ← RED

5 Press the TITLE 1 or 2 button (pressed in step 2) to turn off the title.

Notes

- The colour indication in the viewfinder is not recorded on the tapes.
- You can change the title colour even after starting the recording.

To check the title
To check the memorized title, press the TITLE 1 or 2 button. To turn off the title, press the button again.

To Record the Title

To record the title from the beginning
Press the TITLE 1 or 2 button in recording pause mode.

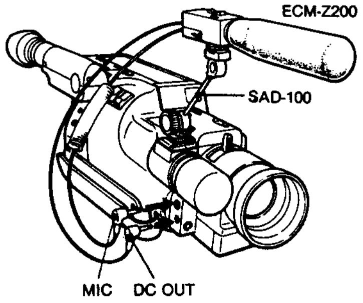
To record during camera recording
Press the TITLE 1 or 2 button at the point from which the title is to be inserted.
The memorized title will be recorded together with the picture.

To stop recording the title
Press the TITLE 1 or 2 button again. The picture recording will continue.

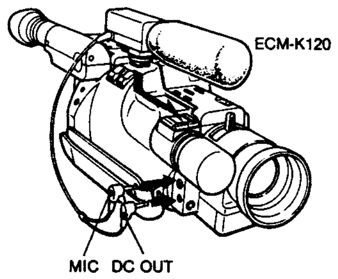
To record the title several times
By repeating the above procedure, you can record the title as many times as desired.

1-12. USE OF AN EXTERNAL MICROPHONE

O-1



O-2



The built-in microphone picks up sounds equally from all directions (omni-directional, monaural type).
By using an optional ECM-Z200 or ECM-K120 microphone, you can enjoy more efficient audio recording.

The **ECM-Z200** can zoom the sound as the lever is slid.
First, attach to the optional SAD-100 external microphone shoe. O-1

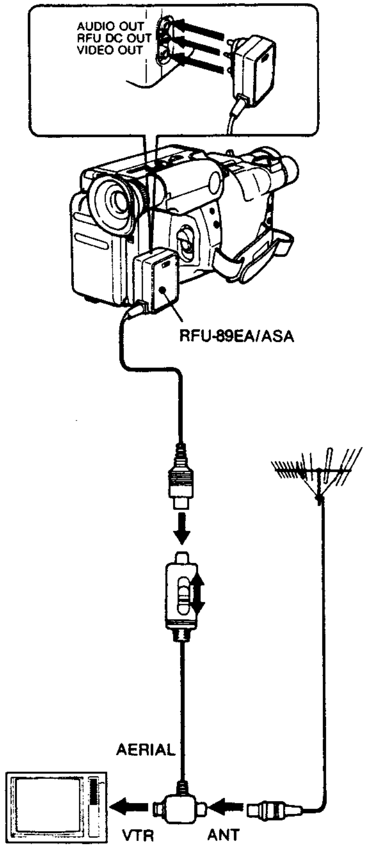
The **ECM-K120** can pick up sound in 3 zones and switch from zone to zone as the selector is set. O-2

A variety of optional microphones.
- Omni-directional microphone: To pick up sounds equally from all directions
- Uni-directional microphone: To pick up specific sounds
- Supercardioid microphone: To isolate a sound
- Zoom microphone: To allow the field of recording to be changed.

Note
The built-in microphone will not operate when an optional microphone is connected to the MIC jack.

1-13. PREPARATION FOR PLAYBACK

P-1



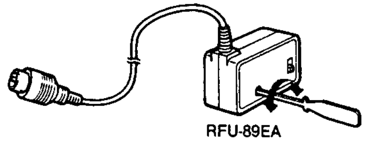
Connecting a TV without audio/video input connectors P-1

1 Connect the RFU-89EA/ASA RFU adaptor to the CCD-F340E.
2 Connect the aerial, CCD-F340E and TV to the aerial selector (supplied with the RFU-89EA/ASA).
Use a 75-ohm coaxial cable for aerial connection.
3 RFU-89EA only: Set the I/G selector according to the TV system of your country.
4 Adjust one of the TV programme positions to receive the signal from the video camera recorder. See "Adjusting the TV" below.
5 Set the selector switch on the aerial selector as follows:

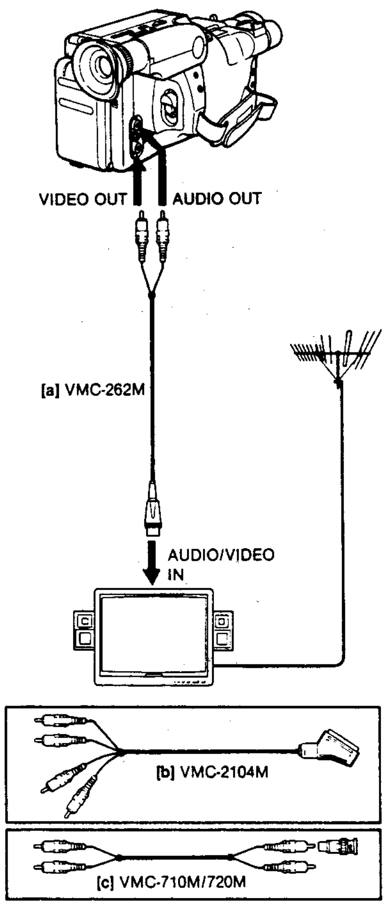
For viewing a playback picture → VTR
For viewing TV programmes → ANT

6 Select the same programme position on the TV as that selected in adjusting the TV.

P-2



P-3



Adjusting the TV with the RFU-89EA

1 Turn on the TV and select a programme position which is not being used to receive a TV station.
2 Set the POWER switch of the CCD-F340E to CAMERA and slide the STANDBY switch up.
3 Set the selector switch of the aerial selector to VTR.
4 Tune the TV until you see the picture and hear the sound from the CCD-F340E.

If the playback picture is not free of disturbance

1 Set the selector switch of the aerial selector to ANT.
2 Adjust the programme position of the TV to a channel between UHF channels 30 and 39 with the tuning control or the fine tuning control on the TV, so that the TV screen shows no picture and so that a steady rustling sound or no sound is heard.
3 Set the selector switch of the aerial selector to VTR.
4 Slowly turn the RF channel of the RFU-89EA with the supplied screwdriver, until the picture from the CCD-F340E becomes clear. P-2
Now the TV adjustment is complete.

Adjusting the TV with the RFU-89ASA

Select the CHANNEL selector on the RFU-89ASA to 0 CH or 1 CH, whichever is not active in your area, and select the same channel on the TV.

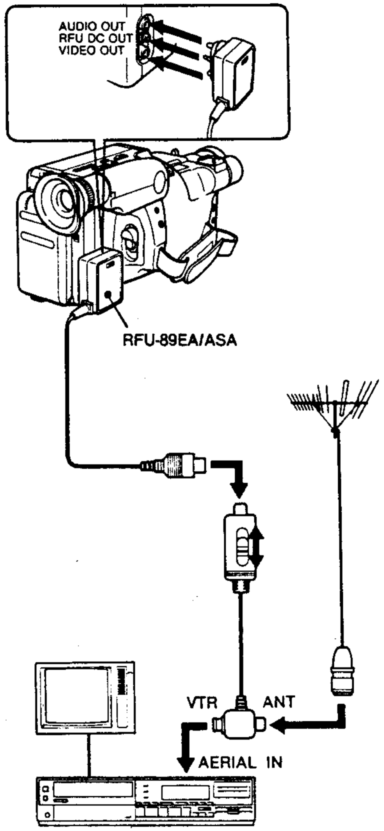
Connecting a TV (or colour monitor) equipped with audio/video input connectors P-3

Leave the TV aerial cable connected to the TV.

1 Connect the CCD-F340E to the TV using an optional connecting cable to match the connectors on the TV.
   [a] VMC-262M: to a 6-pin DIN connector
   [b] VMC-2104M: to a 21-pin connector (EUROCONNECTOR)
   [c] VMC-710M/720M: to phono and BNC-type connectors
2 Set the TV/VIDEO selector button on the TV as follows:

For viewing a playback picture → VIDEO
For viewing TV programmes → TV

P-4



Connecting a TV connected to another VTR without an input selector P-4

Connect the RFU-89EA/ASA RFU adaptor to the CCD-F340E.

1 Connect the RFU-89EA/ASA, aerial, and the VTR to the aerial selector (supplied with the RFU-89EA/ASA).
Use a 75-ohm coaxial cable for aerial connection.
2 RFU-89EA only: Set the I/G selector according to the TV system of your country.
3 Adjust one of the TV programme positions to receive the signal from the video camera recorder. See "Adjusting the TV" on page 33.
4 Set the selector switch on the aerial selector as follows:

For viewing a playback picture → VTR
For viewing TV programmes and playback picture of the VTR → ANT

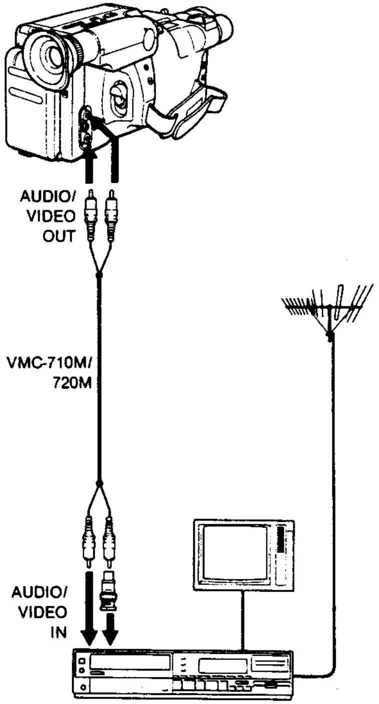
5 Select the same channel on the TV as that selected in adjusting the TV.

Connect the others as shown in the illustration.

Playback

1 Turn on the TV.
2 While pressing the small button, set the POWER switch on the CCD-F340E to PLAYER.
3 Set the selector switch on the antenna selector to VTR and select the channel for the VTR on the TV.
4 Insert a cassette into the CCD-F340E and press the ◁ button. Playback will start.

P-5



Connecting a TV connected to another VTR with an input selector P-5

Use the optional VMC-710M/720M connecting cord.

Set the selectors on the VTR as follows:
Input selector → LINE
TV/VTR selector → VTR

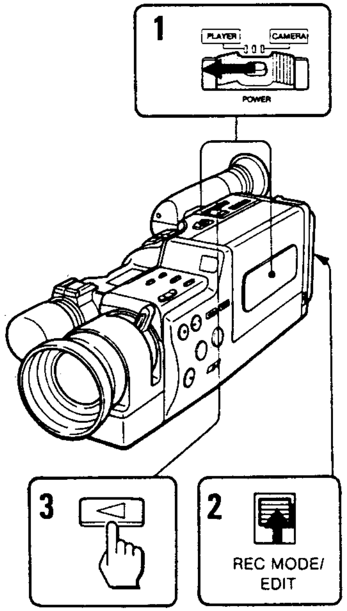
Note
When the VTR to be connected has stereo audio inputs, use the optional VMC-910MS/920MS connecting cord.

Playback

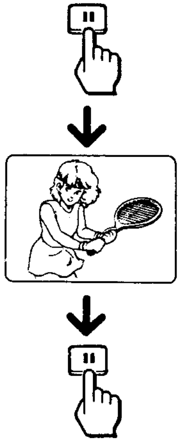
1. Turn on the VTR and TV.
2. While pressing the small button, set the POWER switch on the CCD-F340E to PLAYER.
3. Set the input selector on the VTR to LINE and select the channel for the VTR on the TV.
4. Insert a cassette into the CCD-F340E and press the ◁ button. Playback will start.

1-14. PLAYBACK

Q-1



Q-2



Turn on the TV (or colour monitor), and select the programme position for viewing a playback picture (or set the TV/VIDEO selector to VIDEO).

Q-1

1. While pressing the small button, set the POWER switch to PLAYER, and insert a cassette.
2. Set the REC MODE/EDIT switch in the upper position.
   The unit detects the recorded mode of the tape, and adjust the tape speed automatically.
3. Press the ◁ button.
   Playback will start.

To stop the tape, press the ■ button.

After using, be sure to set the POWER switch on the recorder to OFF.

To view a still picture Q-2
Press the ❚❚ button during playback. To resume playback, press the ❚❚ button again.

Monitoring a High-Speed Picture

During playback

1. In the playback mode, press the ◀◀ or ▶▶ button.
   The picture will be monitored at high speed as long as it is kept pressed.
2. Release the ◀◀ or ▶▶ button at the desired point.
   Normal playback will resume.

To View the Frame-by-Frame Playback Picture

Press the ◀II button during playback or in still picture mode.
To resume normal playback, press the ◀ button.

To View the Slow Motion Picture

Press the ◀I button during playback or in still picture mode.
To resume normal playback, press the ◀ button.

Notes
- If you move the position of the POWER switch during playback, the tape will stop. When you move the POWER switch to CAMERA in the playback pause mode, however, the unit will enter recording pause mode.
- When the pause mode lasts for 5 minutes or more, the unit will automatically enter the stop mode.
- Streaks will appear and the sound will be muted in the high-speed picture.
- When a tape is recorded in SP mode, a still picture and high-speed picture may be noisy with many streaks and become black and white. Streaks will be wider than those of an LP-recorded tape.

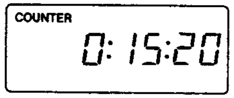
To adjust the frame-by-frame and slow playback pictures
In slow playback mode, press the "+" or "–" side of the EDITSEARCH button until a clear picture is obtained.
Repeat adjusting until a still picture is displayed clearest.

To adjust the still picture
If the still picture appears to shake, press the "+" or "–" side of the EDITSEARCH button until the picture stabilizes.

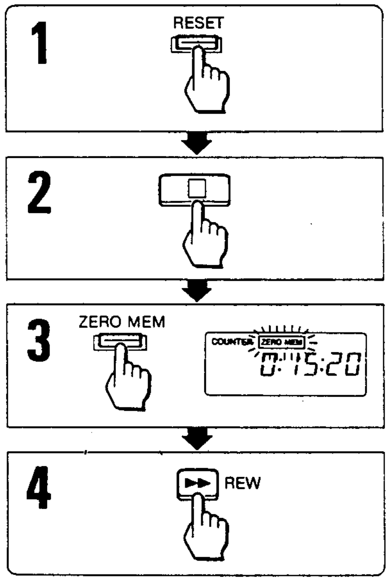
Note
The adjustment is retained in memory as long as the lithium battery is installed. Readjustment is only required when the equipment used for playback is changed or when tapes recorded on other equipment are played back on this unit. The noise may not be eliminated completely when a tape recorded on other equipment is played back in still or slow picture mode.

1-15. USE OF THE TAPE COUNTER

R-1



R-2



During recording or when a tape recorded in the SP mode is played back, the digits on the counter indicate the actual recording or playback time. When a tape recorded in LP mode on another recorder is played back on this unit, the counter counts approximately half the actual playback time.

E.g. When the counter indicates "0:15:20" during playback of an LP-recorded tape, the tape was played back for approximately 30 minutes 40 seconds from the counter zero position. R-1

To Index the Whole Tape

Press the RESET button at the beginning of the tape so that the counter shows "0:00:00". By noting the counter reading at a particular point, you can easily find that point later by referring to the tape counter.

Notes
- The counter reading and the point of the tape may not correspond exactly.
- The counter also operates for a blank, unrecorded portion of a tape.
- There will be a time lag of several seconds on the counter reading after repeated fast-forward and rewind operations or after playing back in slow mode for a long time.

To Return to a Pre-registered Point R-2

1 During recording or playback, press the RESET button at the point you later want to locate.
2 Press the ■ button when the recording or playback has finished.
3 Press the ZERO MEM button. The "ZERO MEM" indicator will blink in the display window.
4 Press the ▶▶ or ◀◀ button.
The tape will be rewound or sent forward and stop automatically when the counter reaches approximately zero.

Notes
- The ZERO MEM button does not function during recording or playback mode.
- Be sure to press the ZERO MEM button when the tape is stopped.
- The ZERO MEM mode is cancelled automatically once the tape is rewound or sent forward to zero.

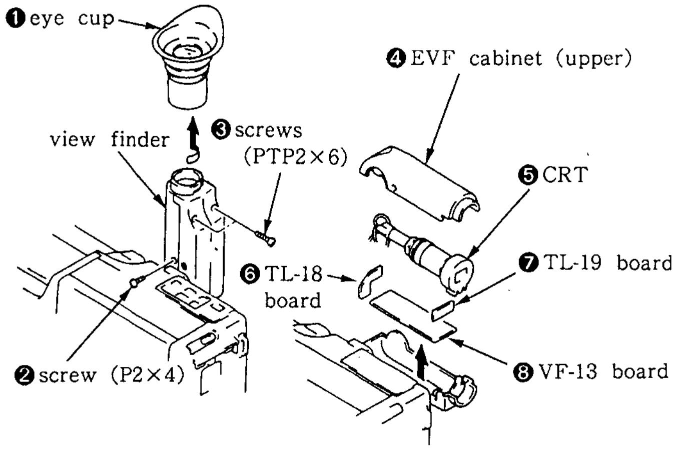
1-16. TROUBLESHOOTING

If you think you have a problem, double-check before calling the serviceman.
You may have overlooked something relatively simple!

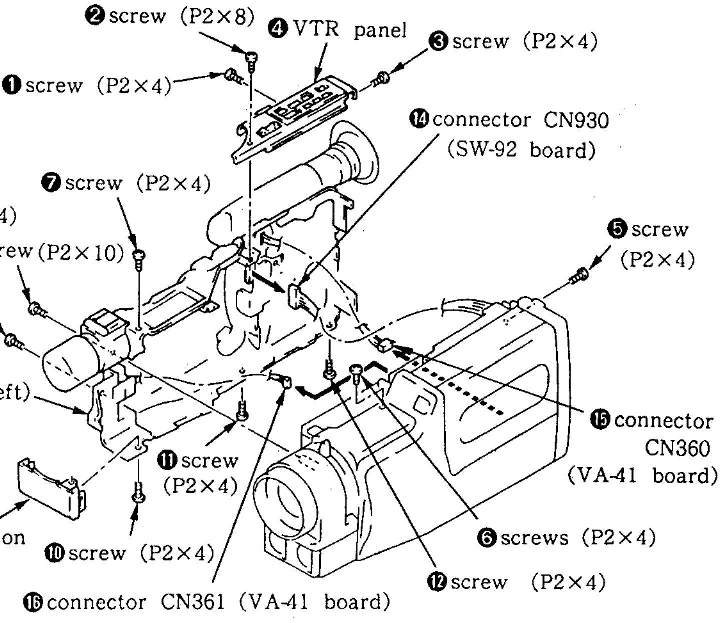
Symptom	Cause (Trouble indicator)	Procedure
The power will not turn on.	The battery is not attached.	Attach the battery.
	The battery is exhausted.	Use a new battery.
	The AC power adaptor is not connected to a wall outlet.	Connect the adaptor to a wall outlet.
The START/STOP button does not operate.	The tape is affixed to the drum.	Remove the cassette with the cassette eject button.
	The tape is at its end. (TAPE END)	Rewind the tape or use a new one.
	The POWER switch is set to PLAYER.	Set it to CAMERA.
	The tab on the cassette is out (red). (CASSETTE)	Use a new casssette or slide the tab.
The tape does not move when a tape transport button is pressed.	POWER switch is set to CAMERA or OFF.	Set it to PLAYER.
	The tape is at its end.	Rewind the tape or use a new one.
The power turns off.	While being operated in the CAMERA mode, the recorder has been in the pause mode for more than 5 minutes.	Slide down the STANDBY switch, and slide it up again.
	The battery is exhausted. (BATTERY)	Use a charged battery.
A vertical band appears when a subject such as lights or a candle flame is shot against a dark background.	The contrast between the subject and background is too high; the camera is not malfunctioning.	—
The battery pack is quickly discharged.	The ambient temperature is too low.	—
	The battery pack has not been charged fully.	Charge the battery pack again.
The cassette cannot be removed from the compartment.	The battery is exhausted.	Use the charged battery or the AC power adaptor
The auto focusing function does not work.	The AUTO LOCK switch is set to the right.	Set the AUTO LOCK switch to AUTO LOCK.
	Shooting conditions are not suitable for auto focusing operation. (See page 10.)	Focus manually.
The colour of the playback is not appropriate.	The white balance sensor is covered.	Clear the sensor.
The image on the viewfinder screen is not clear.	The viewfinder lens is not adjusted.	Adjust the viewfinder lens.
The playback picture is not clear.	The REC MODE/EDIT switch is set to the "EDIT" position.	Set the REC MODE/EDIT switch to the upper position.
	The programme position for the VTR is not adjusted on the TV.	Adjust the TV.
The playback picture is too bright.	The BACK LIGHT button was not released during recording. (BACK LIGHT)	—
The picture is noisy.	The video heads may be contaminated.	Clean the heads using the Sony V8-25CL video head cleaning cassette. For details on cleaning, refer to the instructions furnished with the cleaning cassette. If the V8-25CL cleaning cassette is not available in your area, have the heads cleaned at the nearest Sony service facility.
No function except for cassette ejection works.	Moisture condensation has occurred. (DEW)	Remove the cassette and leave the unit for at least an hour.
The indicators in the viewfinder blink.	The lithium battery is not installed. (COUNTER)	Install the lithium battery.
	The lithium battery is exhausted. (COUNTER)	Use a new battery

SECTION 2
DISASSEMBLY

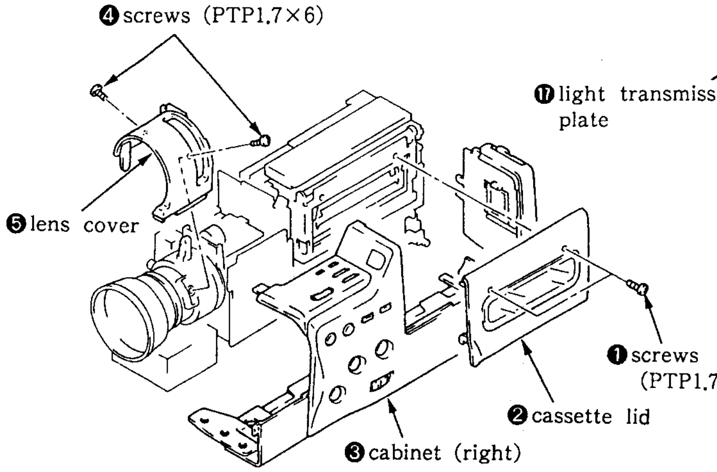
2-1. REMOVING THE VIEW FINDER


❶eye cup
view finder
❸screws (PTP2×6)
❹EVF cabinet (upper)
❺CRT
❻TL-18 board
❼TL-19 board
❷screw (P2×4)
❽VF-13 board

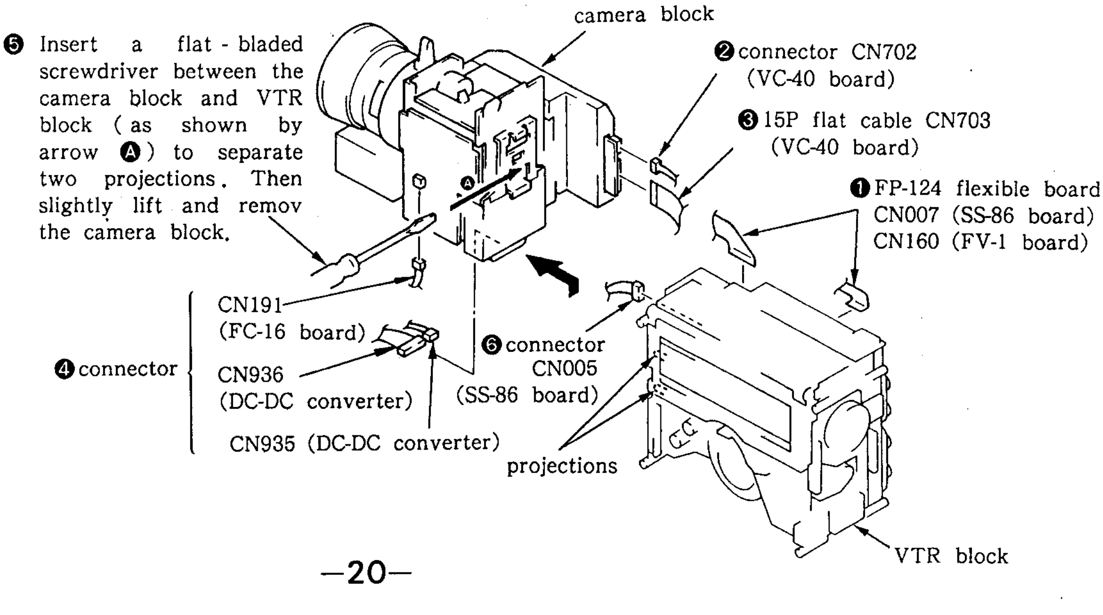
2-2. REMOVING THE CABINET (LEFT)


❷screw (P2×8)
❹VTR panel
❸screw (P2×4)
❶screw (P2×4)
⓮connector CN930 (SW-92 board)
❼screw (P2×4)
❾screw (P2×4)
❽screw (P2×10)
❺screw (P2×4)
⓭cabinet (left)
⓯connector CN360 (VA-41 board)
⓫screw (P2×4)
⓱light transmission plate
❿screw (P2×4)
❻screws (P2×4)
⓬screw (P2×4)
⓰connector CN361 (VA-41 board)

2-3. REMOVING THE CABINET (RIGHT)

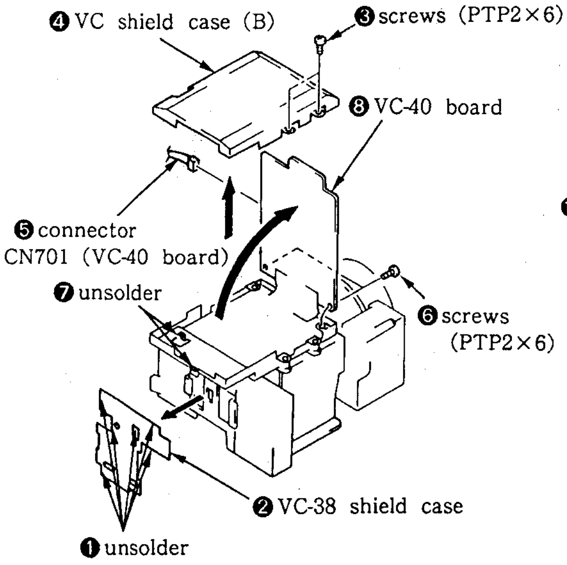

❹screws (PTP1.7×6)
❺lens cover
❶screws (PTP1.7×5)
❷cassette lid
❸cabinet (right)

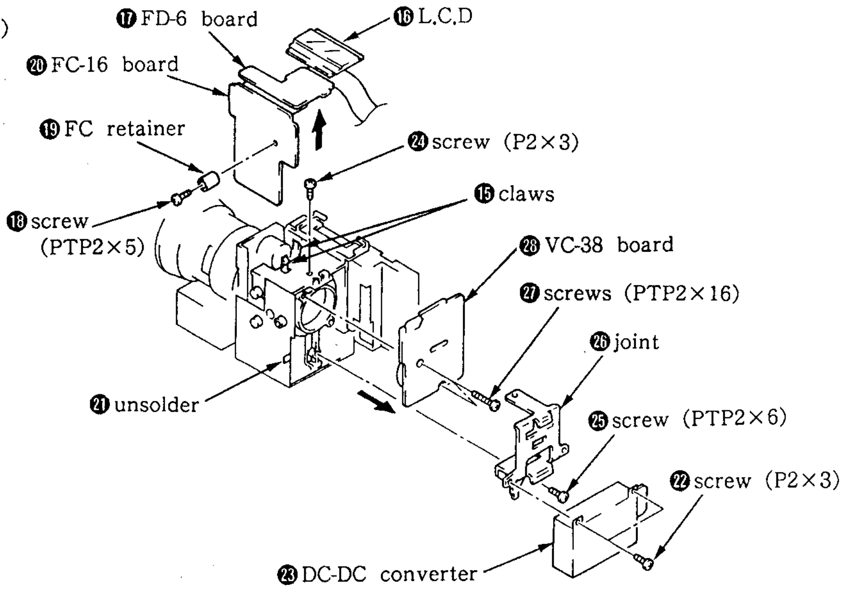
2-4. SEPARATING THE CAMERA AND VTR BLOCKS

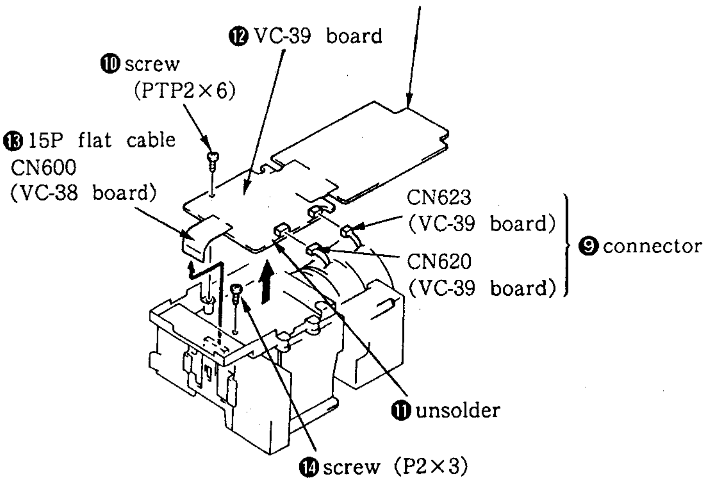

❺ Insert a flat - bladed screwdriver between the camera block and VTR block (as shown by arrow Ⓐ) to separate two projections. Then slightly lift and remov the camera block.

camera block
❷connector CN702 (VC-40 board)
❸15P flat cable CN703 (VC-40 board)
❶FP-124 flexible board CN007 (SS-86 board) CN160 (FV-1 board)
Ⓐ
CN191 (FC-16 board)
❹connector
CN936 (DC-DC converter)
CN935 (DC-DC converter)
❻connector CN005 (SS-86 board)
projections
VTR block

2-5. REMOVING THE VC-38 (CCD IMAGER), VC -39, AND VC-40 BOARDS


④ VC shield case (B)
③ screws (PTP2×6)
⑧ VC-40 board
⑤ connector
CN701 (VC-40 board)
⑦ unsolder
⑥ screws
(PTP2×6)
② VC-38 shield case
① unsolder

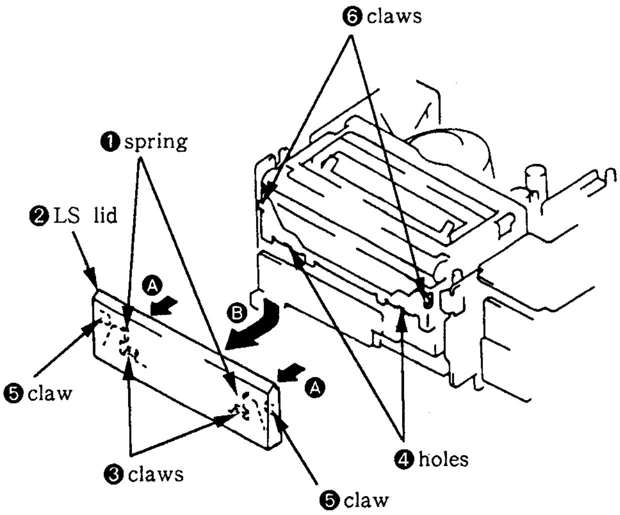

⑰ FD-6 board
⑯ L.C.D
⑳ FC-16 board
⑲ FC retainer
㉔ screw (P2×3)
⑮ claws
⑱ screw
(PTP2×5)
㉘ VC-38 board
㉗ screws (PTP2×16)
㉖ joint
㉑ unsolder
㉕ screw (PTP2×6)
㉒ screw (P2×3)
㉓ DC-DC converter


VC-40 board
⑫ VC-39 board
⑩ screw
(PTP2×6)
⑬ 15P flat cable
CN600
(VC-38 board)
CN623
(VC-39 board)
CN620
(VC-39 board)
⑨ connector
⑪ unsolder
⑭ screw (P2×3)

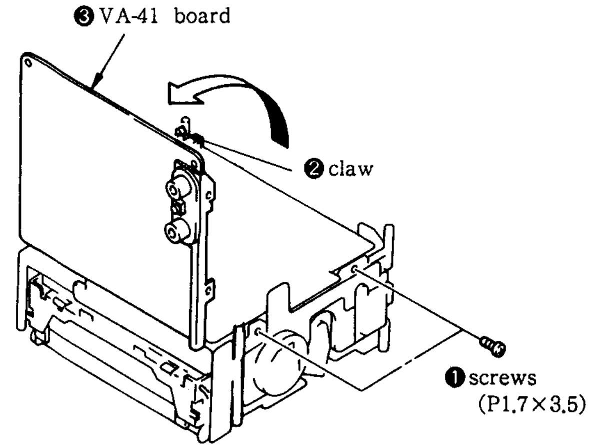
2-6. REMOVING THE LS LID

1) Insert a thin flat-bladed screwdriver into the spring ① at 2 points and push it in the direction of arrow Ⓐ, and then remove the LS lid ② in the direction of arrow Ⓑ.

Note : To re-assemble, locate the two claws ③ at the back of each hole ④ at 2 points, and also the two claws ⑤ at the back of each claw ⑥ at 2 locations.

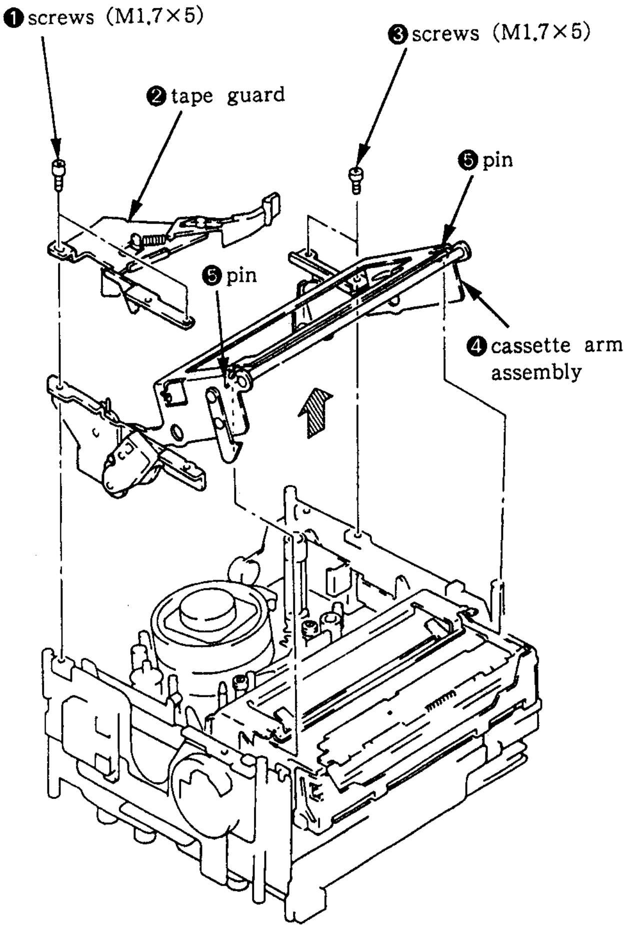

⑥ claws
① spring
② LS lid
Ⓐ
Ⓑ
Ⓐ
⑤ claw
④ holes
③ claws
⑤ claw

2-7. OPENING THE VA-41 BOARD

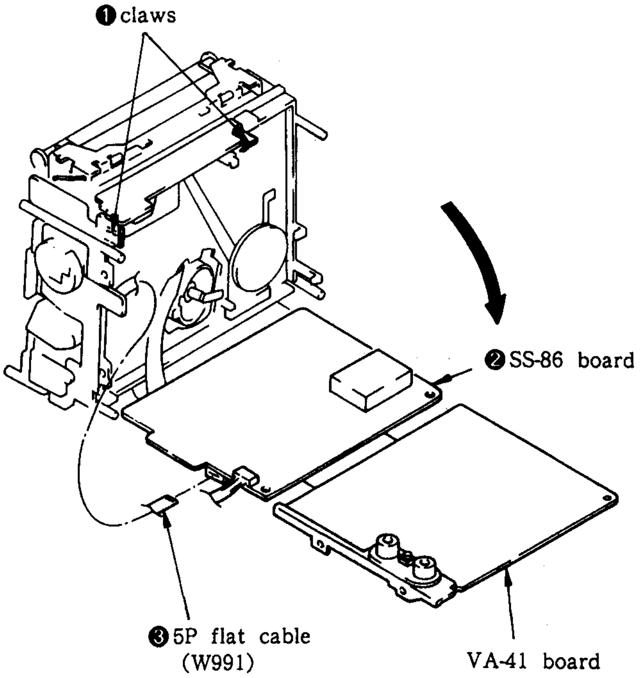

❸VA-41 board
❷claw
❶screws
(P1.7×3.5)

2-9. REMOVING THE CASSETTE ARM

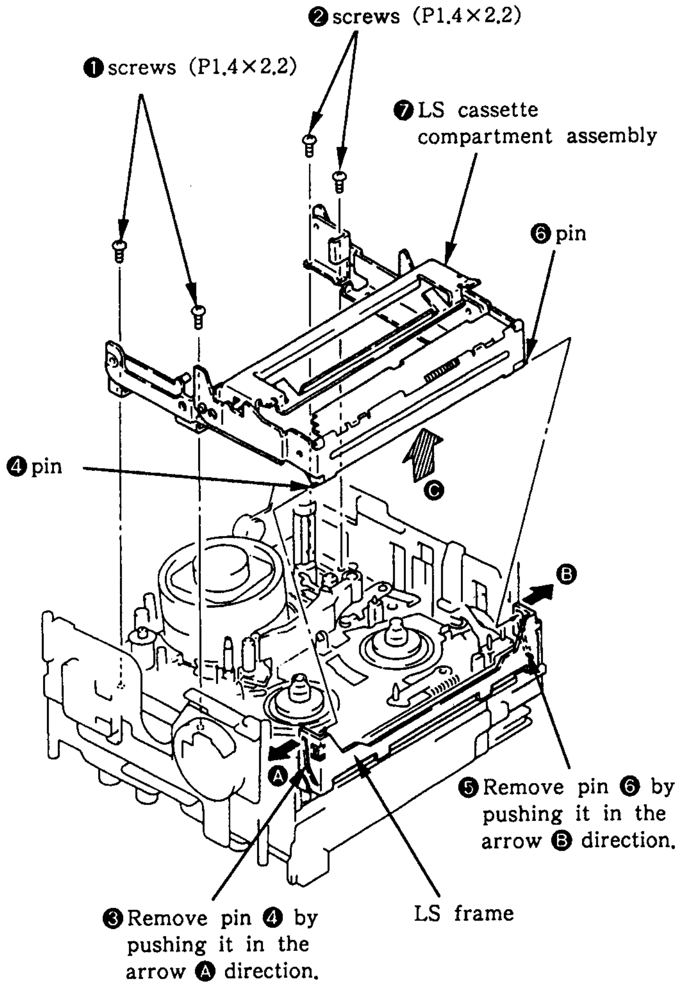
Note : To re-assembly the cassette arm assembly ❹, ajust it so that pin ❺ can be inserted in the correct position.


❶screws (M1.7×5)
❸screws (M1.7×5)
❷tape guard
❺pin
❺pin
❹cassette arm assembly

2-8. OPENING THE SS-86 BOARD

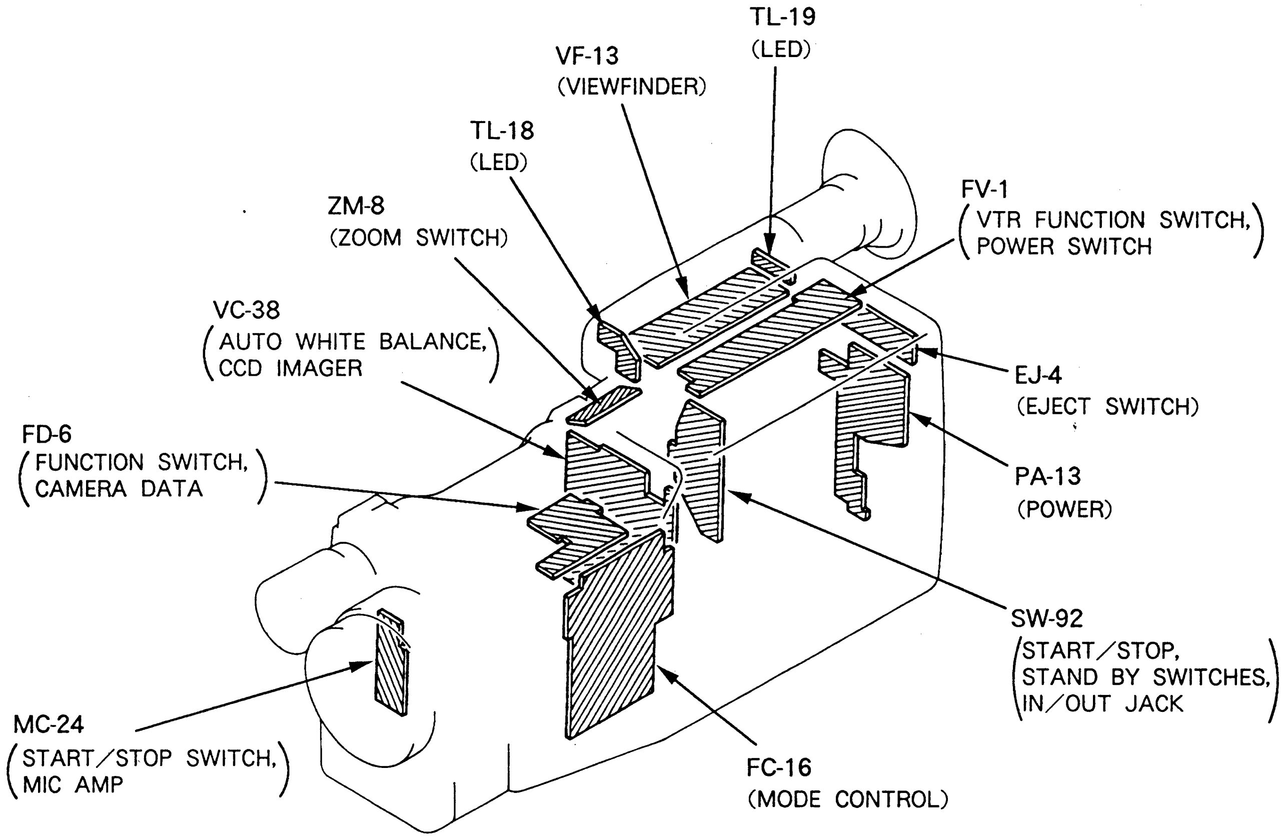

❶claws
❷SS-86 board
❸5P flat cable
(W991)
VA-41 board

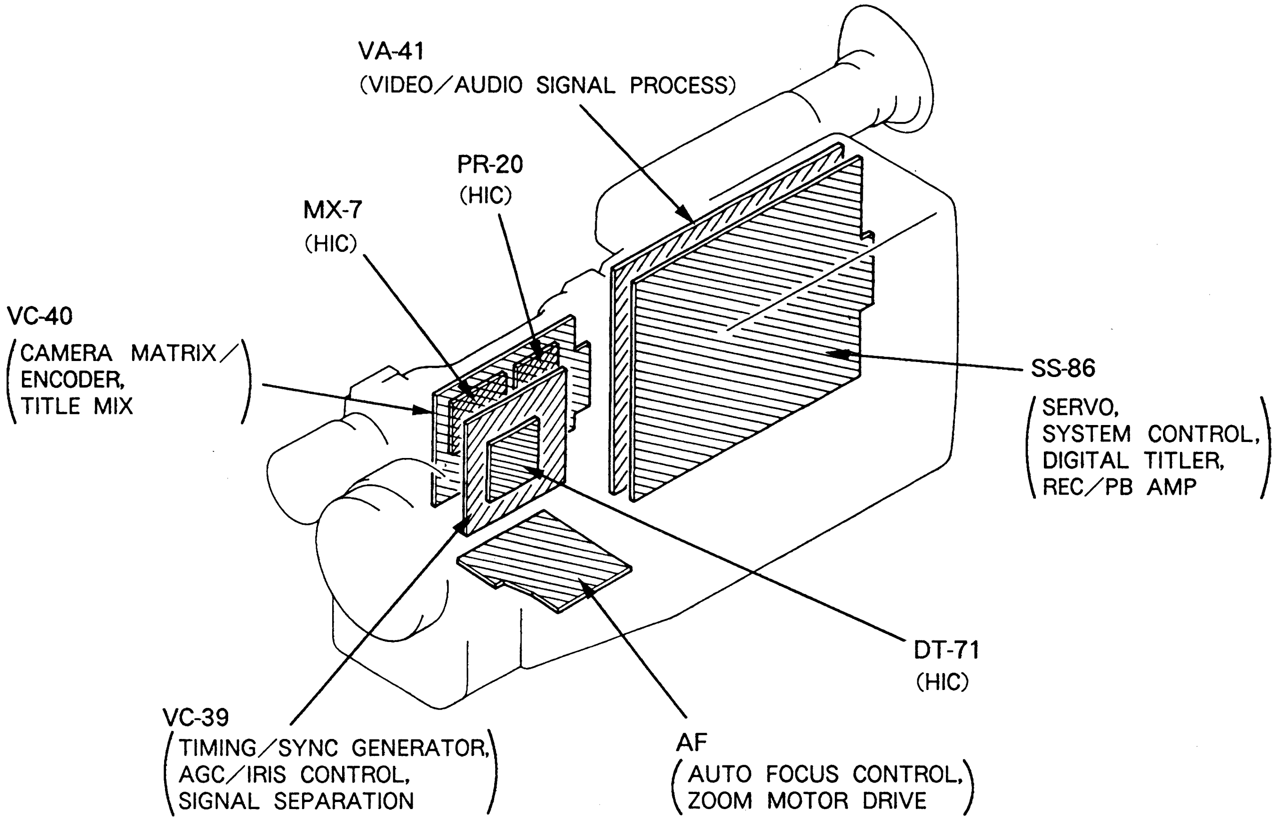
2-10. REMOVING LS CASSETTE COMPARTMENT ASSEMBLY


❷screws (P1.4×2.2)
❶screws (P1.4×2.2)
❼LS cassette compartment assembly
❻pin
❹pin
Ⓒ
Ⓑ
Ⓐ
❺Remove pin ❻ by pushing it in the arrow Ⓑ direction.
❸Remove pin ❹ by pushing it in the arrow Ⓐ direction.
LS frame

SECTION 3
DIAGRAMS

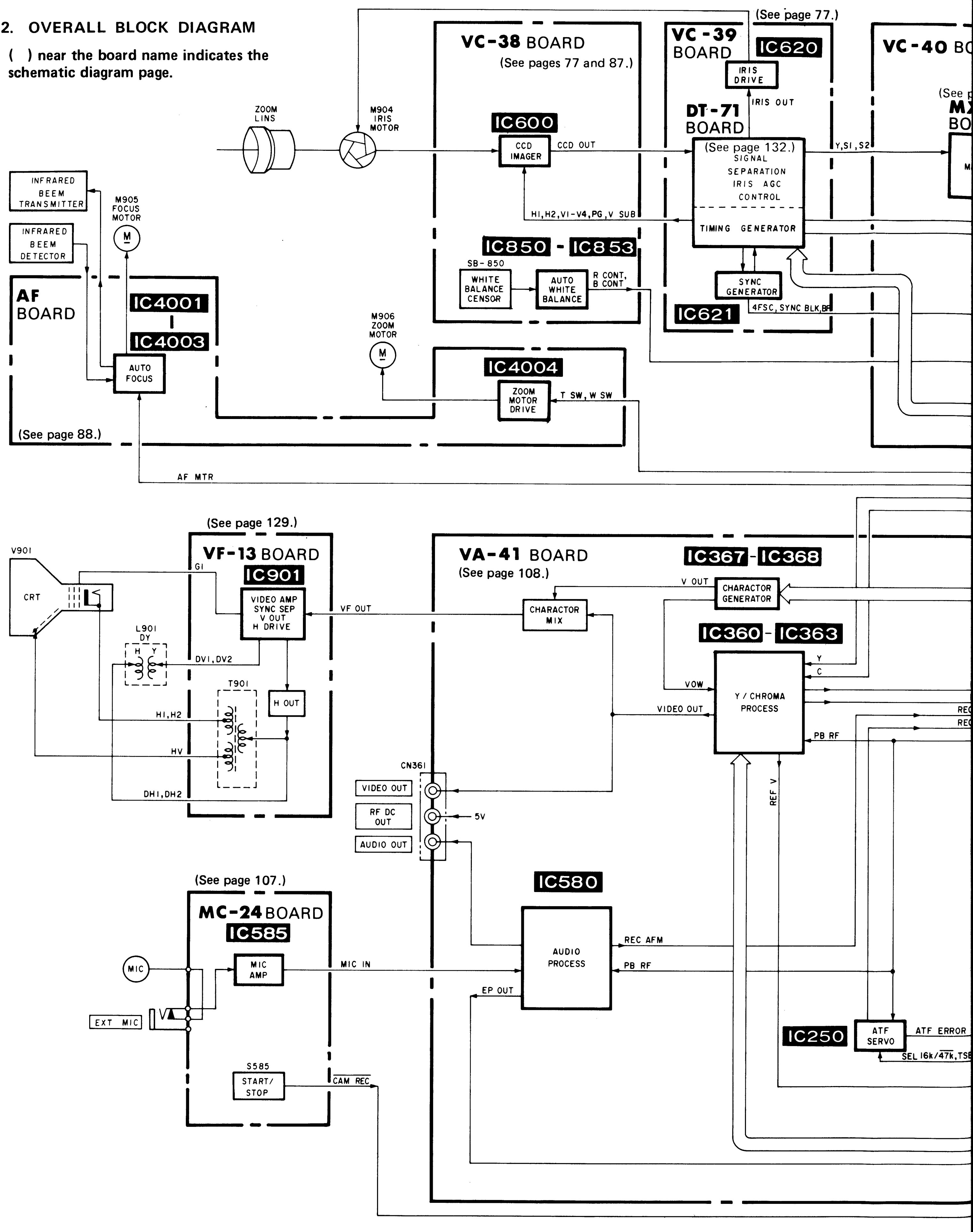
3-1. CIRCUIT BOARDS LOCATION

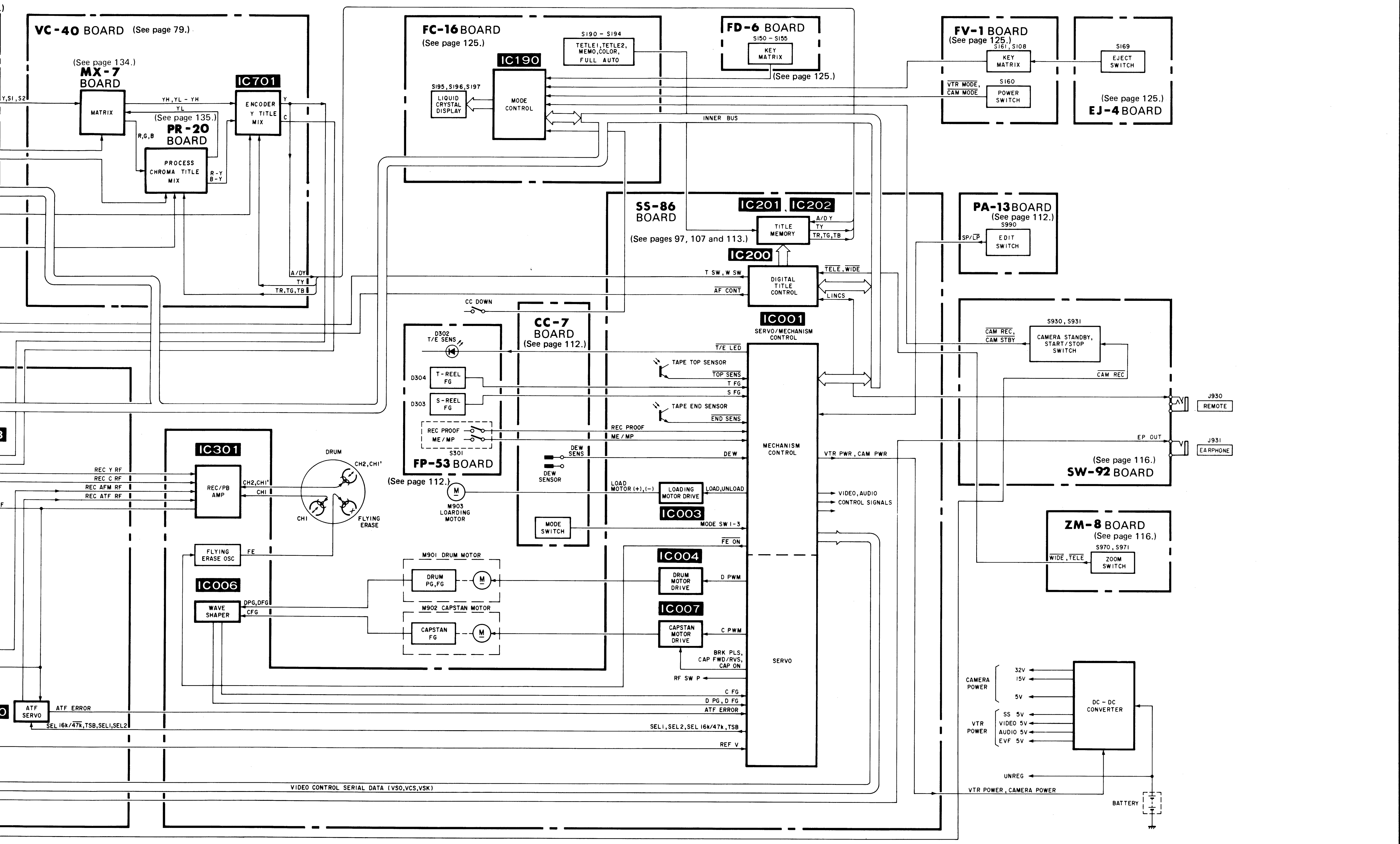

TL-19
(LED)
VF-13
(VIEWFINDER)
TL-18
(LED)
ZM-8
(ZOOM SWITCH)
FV-1
(VTR FUNCTION SWITCH,
POWER SWITCH)
VC-38
(AUTO WHITE BALANCE,
CCD IMAGER)
EJ-4
(EJECT SWITCH)
FD-6
(FUNCTION SWITCH,
CAMERA DATA)
PA-13
(POWER)
SW-92
(START/STOP,
STAND BY SWITCHES,
IN/OUT JACK)
MC-24
(START/STOP SWITCH,
MIC AMP)
FC-16
(MODE CONTROL)


VA-41
(VIDEO/AUDIO SIGNAL PROCESS)
PR-20
(HIC)
MX-7
(HIC)
VC-40
(CAMERA MATRIX/
ENCODER,
TITLE MIX)
SS-86
(SERVO,
SYSTEM CONTROL,
DIGITAL TITLER,
REC/PB AMP)
DT-71
(HIC)
VC-39
(TIMING/SYNC GENERATOR,
AGC/IRIS CONTROL,
SIGNAL SEPARATION)
AF
(AUTO FOCUS CONTROL,
ZOOM MOTOR DRIVE)

3-2. OVERALL BLOCK DIAGRAM

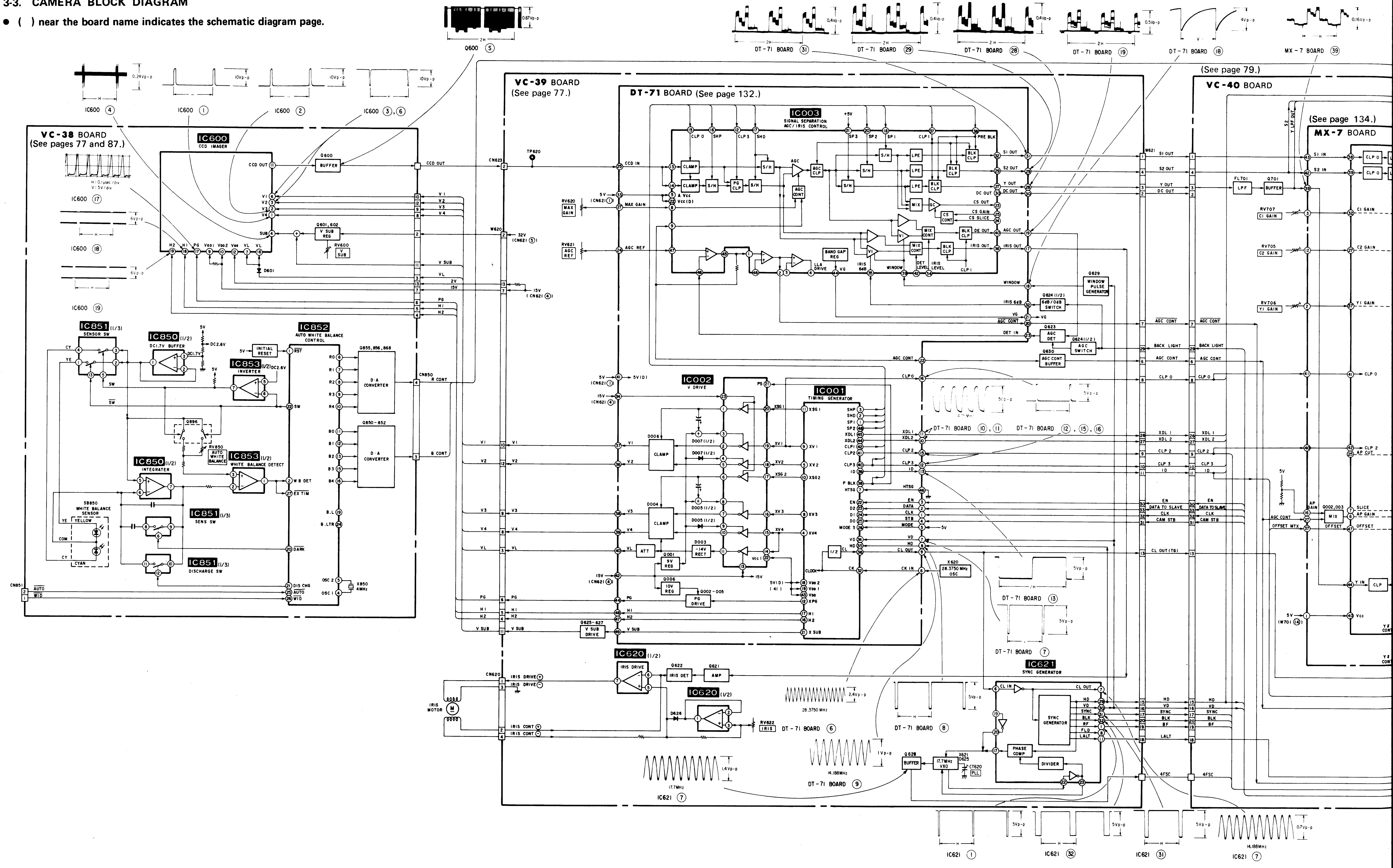
- ( ) near the board name indicates the schematic diagram page.

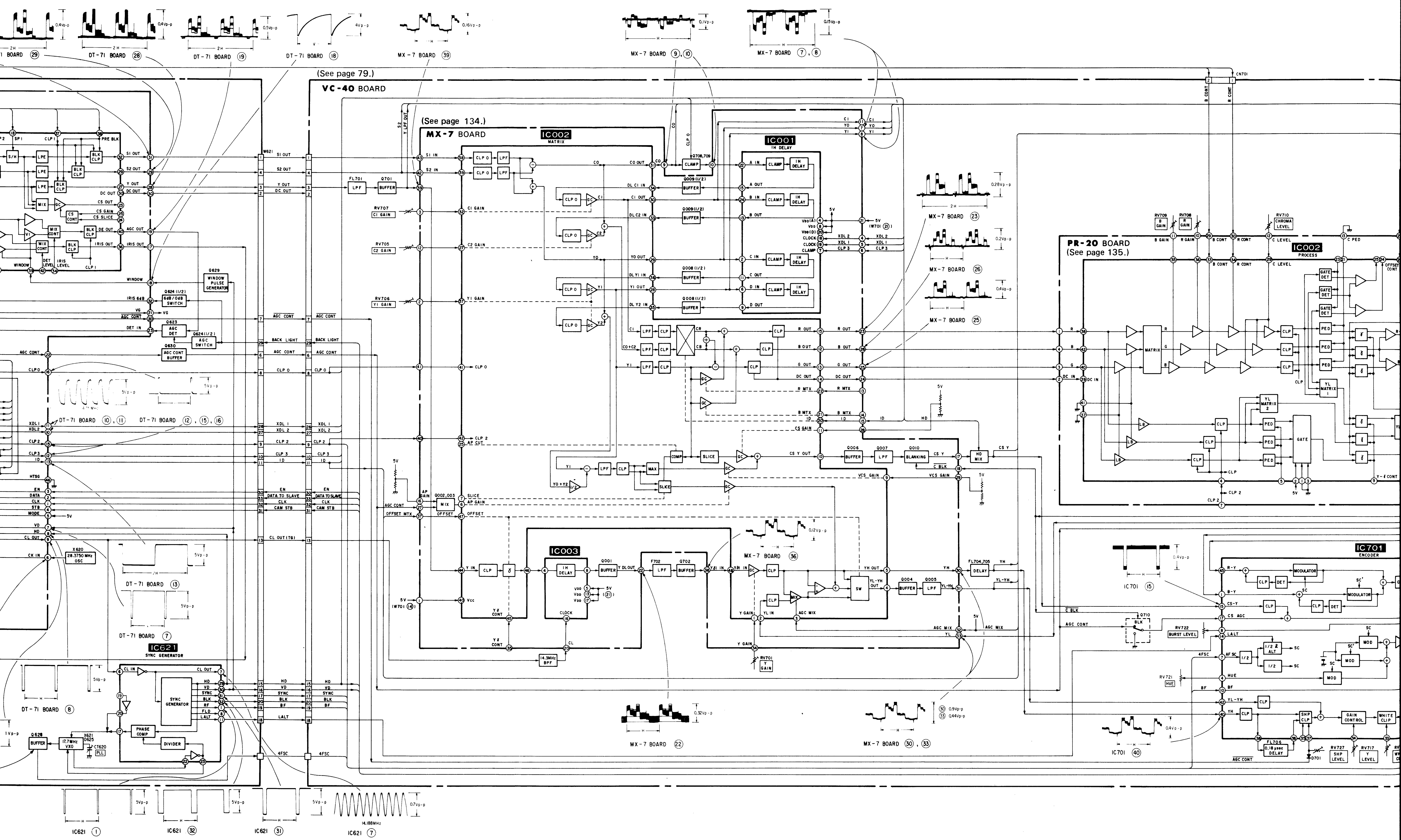

ZOOM LINS
M904 IRIS MOTOR
VC-38 BOARD
(See pages 77 and 87.)
IC600
CCD IMAGER
CCD OUT
H1,H2,V1-V4,PG,V SUB
IC850 - IC853
SB-850
WHITE BALANCE CENSOR
AUTO WHITE BALANCE
R CONT, B CONT
VC-39 BOARD
(See page 77.)
IC620
IRIS DRIVE
IRIS OUT
DT-71 BOARD
(See page 132.)
SIGNAL SEPARATION
IRIS AGC CONTROL
TIMING GENERATOR
SYNC GENERATOR
IC621
4FSC, SYNC BLK,BF
Y,S1,S2
VC-40 BO
(See p
MX
BO
M
INFRARED BEEM TRANSMITTER
INFRARED BEEM DETECTOR
M905 FOCUS MOTOR
AF BOARD
IC4001
IC4003
AUTO FOCUS
(See page 88.)
M906 ZOOM MOTOR
IC4004
ZOOM MOTOR DRIVE
T SW, W SW
AF MTR
V901
CRT
L901 DY
H Y
(See page 129.)
VF-13 BOARD
IC901
G1
VIDEO AMP SYNC SEP V OUT H DRIVE
VF OUT
DV1,DV2
T901
H OUT
H1,H2
HV
DH1,DH2
VA-41 BOARD
(See page 108.)
IC367-IC368
V OUT
CHARACTOR GENERATOR
CHARACTOR MIX
IC360-IC363
Y
C
VOW
VIDEO OUT
Y / CHROMA PROCESS
REC
REC
PB RF
REF V
CN361
VIDEO OUT
RF DC OUT
AUDIO OUT
5V
IC580
AUDIO PROCESS
REC AFM
PB RF
EP OUT
IC250
ATF SERVO
ATF ERROR
SEL 16k/47k,TSE
(See page 107.)
MC-24 BOARD
IC585
MIC
MIC AMP
MIC IN
EXT MIC
S585
START/ STOP
CAM REC

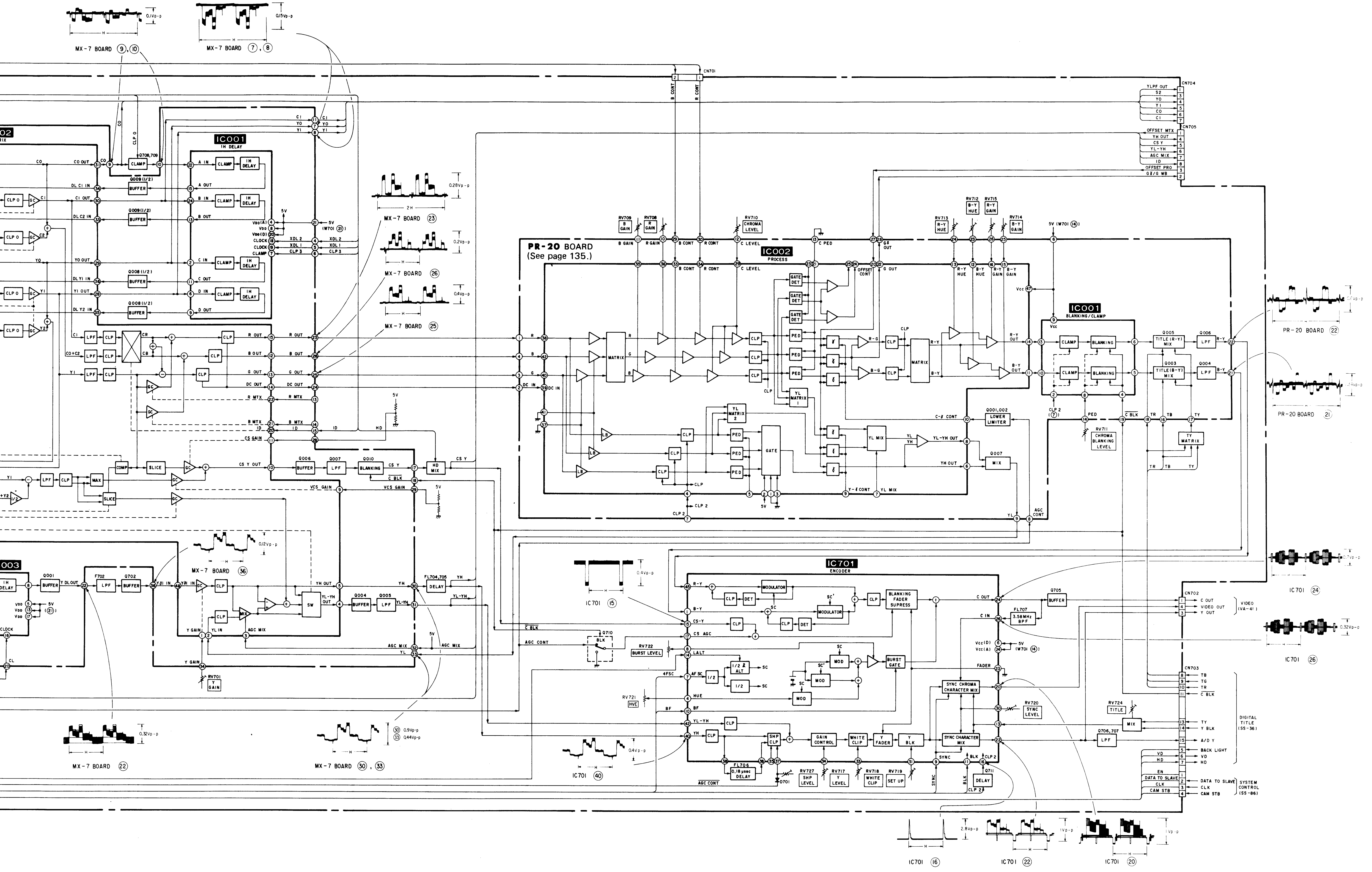

VC-40 BOARD (See page 79.)
(See page 134.)
MX-7 BOARD
MATRIX
Y,SI,S2
YH,YL - YH
YL
(See page 135.)
PR-20 BOARD
R,G,B
PROCESS CHROMA TITLE MIX
R-Y
B-Y
IC701
ENCODER Y TITLE MIX
Y
C
A/DY
TY
TR,TG,TB
FC-16 BOARD
(See page 125.)
IC190
MODE CONTROL
S195,S196,S197
LIQUID CRYSTAL DISPLAY
S190 - S194
TETLE1,TETLE2, MEMO,COLOR, FULL AUTO
INNER BUS
FD-6 BOARD
S150 - S155
KEY MATRIX
(See page 125.)
FV-1 BOARD
(See page 125.)
S161, S108
KEY MATRIX
VTR MODE, CAM MODE
S160
POWER SWITCH
S169
EJECT SWITCH
(See page 125.)
EJ-4 BOARD
SS-86 BOARD
(See pages 97, 107 and 113.)
IC201, IC202
TITLE MEMORY
A/D Y
TY
TR,TG,TB
IC200
DIGITAL TITLE CONTROL
T SW, W SW
AF CONT
TELE, WIDE
LINCS
IC001
SERVO/MECHANISM CONTROL
PA-13 BOARD
(See page 112.)
S990
SP/LP
EDIT SWITCH
S930, S931
CAM REC, CAM STBY
CAMERA STANDBY, START/STOP SWITCH
CAM REC
J930
REMOTE
EP OUT
J931
EARPHONE
(See page 116.)
SW-92 BOARD
CC DOWN
CC-7 BOARD
(See page 112.)
D302
T/E SENS
T/E LED
D304
T-REEL FG
D303
S-REEL FG
REC PROOF
ME/MP
S301
FP-53 BOARD
(See page 112.)
TAPE TOP SENSOR
TOP SENS
T FG
S FG
TAPE END SENSOR
END SENS
REC PROOF
ME/MP
DEW SENS
DEW SENSOR
DEW
MECHANISM CONTROL
VTR PWR, CAM PWR
LOAD MOTOR (+),(-)
LOADING MOTOR DRIVE
LOAD,UNLOAD
M903
LOARDING MOTOR
IC003
VIDEO, AUDIO CONTROL SIGNALS
MODE SWITCH
MODE SW 1-3
FE ON
ZM-8 BOARD
(See page 116.)
S970, S971
WIDE, TELE
ZOOM SWITCH
IC301
REC Y RF
REC C RF
REC AFM RF
REC ATF RF
REC/PB AMP
CH2,CHI'
CHI
DRUM
CH2,CHI'
CHI
FLYING ERASE
FLYING ERASE OSC
FE
IC006
WAVE SHAPER
DPG,DFG
CFG
M901 DRUM MOTOR
DRUM PG,FG
M
IC004
DRUM MOTOR DRIVE
D PWM
M902 CAPSTAN MOTOR
CAPSTAN FG
M
IC007
CAPSTAN MOTOR DRIVE
C PWM
BRK PLS, CAP FWD/RVS, CAP ON
SERVO
RF SW P
C FG
D PG, D FG
ATF ERROR
SEL1,SEL2,SEL 16k/47k,TSB
REF V
ATF SERVO
ATF ERROR
SEL 16k/47k,TSB,SEL1,SEL2
VIDEO CONTROL SERIAL DATA (VSO,VCS,VSK)
CAMERA POWER
32V
15V
5V
VTR POWER
SS 5V
VIDEO 5V
AUDIO 5V
EVF 5V
DC - DC CONVERTER
UNREG
VTR POWER, CAMERA POWER
BATTERY

3-3. CAMERA BLOCK DIAGRAM

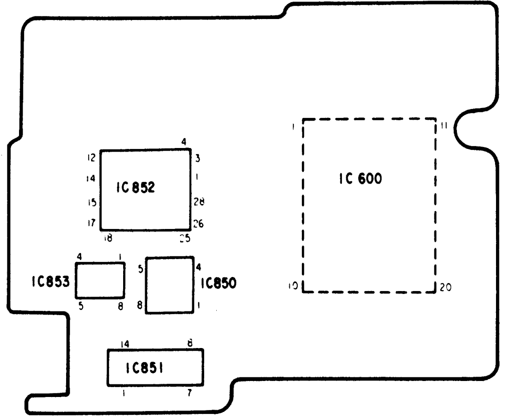
- ( ) near the board name indicates the schematic diagram page.

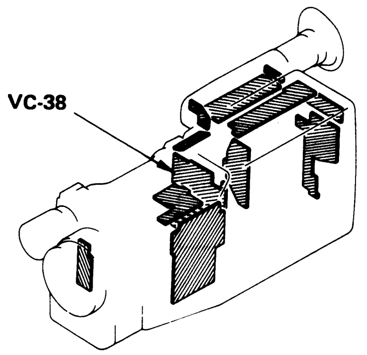

VC-38 BOARD
(See pages 77 and 87.)
VC-39 BOARD
(See page 77.)
DT-71 BOARD (See page 132.)
VC-40 BOARD
(See page 79.)
MX-7 BOARD
(See page 134.)
IC600
CCD IMAGER
Q600
BUFFER
CCD OUT
Q601, 602
V SUB REG
RV600
V SUB
D601
IC851 (1/3)
SENSOR SW
IC850 (1/2)
DC1.7V BUFFER
IC852
AUTO WHITE BALANCE CONTROL
IC853 (1/2)
INVERTER
INITIAL RESET
Q855, 856, 868
D-A CONVERTER
Q850 - 852
D-A CONVERTER
Q896
RV850
AUTO WHITE BALANCE
IC853 (1/2)
WHITE BALANCE DETECT
IC850 (1/2)
INTEGRATER
S8850
WHITE BALANCE SENSOR
YELLOW
CYAN
IC851 (1/3)
SENS SW
IC851 (1/3)
DISCHARGE SW
X850
4MHz
CN851
AUTO
WID
CN850
R CONT
B CONT
IC003
SIGNAL SEPARATION AGC/IRIS CONTROL
CLAMP
S/H
PG CLP
AGC
AGC CLP
AGC CONT
LPE
BLK CLP
PRE BLK
MIX
CS CONT
CS GAIN
CS SLICE
MIX CONT
WINDOW
BAND GAP REG
LLA DRIVE
IRIS 64B
DET LEVEL
IRIS LEVEL
S1 OUT
S2 OUT
Y OUT
DC OUT
AGC OUT
IRIS OUT
RV620
MAX GAIN
RV621
AGC REF
TP620
Q629
WINDOW PULSE GENERATOR
Q624 (1/2)
6dB/0dB SWITCH
Q623
AGC DET
Q624 (1/2)
AGC SWITCH
Q630
AGC CONT BUFFER
IC002
V DRIVE
IC001
TIMING GENERATOR
D006
D007 (1/2)
D004
D005 (1/2)
D003
-14V RECT
CLAMP
ATT
Q001
9V REG
Q006
10V REG
Q002 - 005
PG DRIVE
Q625 - 627
V SUB DRIVE
X620
28.3750 MHz OSC
1/2
IC620 (1/2)
IRIS DRIVE
Q622
IRIS DET
Q621
AMP
IC620 (1/2)
D626
RV622
IRIS
IRIS MOTOR
CN620
IRIS DRIVE⊕
IRIS DRIVE⊖
IRIS CONT⊕
IRIS CONT⊖
IC621
SYNC GENERATOR
SYNC GENERATOR
PHASE COMP
DIVIDER
Q628
BUFFER
17.7MHz VXO
X621
D625
CT620
PLL
FL701
LPF
Q701
BUFFER
RV707
C1 GAIN
RV705
C2 GAIN
RV706
Y1 GAIN
Q002, 003
MIX
CLP
SLICE
AP GAIN
OFFSET
Vcc
AGC CONT
BACK LIGHT
CLP 0
XDL 1
XDL 2
CLP 2
CLP 3
ID
EN
DATA TO SLAVE
CLK
CAM STB
CL OUT (TG)
HD
VD
SYNC
BLK
BF
LALT
4FSC
Q600 ⓢ
0.67Vp-p
2H
IC600 ④
0.24Vp-p
H
IC600 ①
10Vp-p
IC600 ②
IC600 ③, ⑥
IC600 ⑰
H: 0.1μsec/div
V: 5V/div
IC600 ⑱
6Vp-p
IC600 ⑲
DT-71 BOARD ㉛
0.4Vp-p
DT-71 BOARD ㉙
DT-71 BOARD ㉘
DT-71 BOARD ⑲
0.5Vp-p
DT-71 BOARD ⑱
4Vp-p
V
MX-7 BOARD ㊴
0.16Vp-p
DT-71 BOARD ⑩, ⑪
5Vp-p
DT-71 BOARD ⑫, ⑮, ⑯
DT-71 BOARD ⑬
DT-71 BOARD ⑦
28.3750 MHz
2.4Vp-p
DT-71 BOARD ⑥
DT-71 BOARD ⑧
14.188MHz
1Vp-p
DT-71 BOARD ⑨
17.7MHz
1.4Vp-p
IC621 ⑦
IC621 ①
IC621 ㉜
IC621 ㉛
0.7Vp-p
14.188MHz
IC621 ⑦


(See page 79.)
VC-40 BOARD
(See page 134.)
MX-7 BOARD
IC002 MATRIX
IC001 1H DELAY
IC003 1H DELAY
IC621 SYNC GENERATOR
PR-20 BOARD
(See page 135.)
IC002 PROCESS
IC701 ENCODER
CN701
DT-71 BOARD ㉙
DT-71 BOARD ㉘
DT-71 BOARD ⑲
DT-71 BOARD ⑱
MX-7 BOARD ㊴
MX-7 BOARD ⑨, ⑩
MX-7 BOARD ⑦, ⑧
MX-7 BOARD ㉓
MX-7 BOARD ㉖
MX-7 BOARD ㉕
MX-7 BOARD ㊱
MX-7 BOARD ㉒
MX-7 BOARD ㉚, ㉝
DT-71 BOARD ⑩, ⑪
DT-71 BOARD ⑫, ⑮, ⑯
DT-71 BOARD ⑬
DT-71 BOARD ⑦
DT-71 BOARD ⑧
IC701 ⑮
IC701 ㊵
IC621 ①
IC621 ㉜
IC621 ㉛
IC621 ⑦
0.4Vp-p
0.5Vp-p
4Vp-p
0.16Vp-p
0.1Vp-p
0.15Vp-p
0.28Vp-p
0.2Vp-p
0.4Vp-p
0.2Vp-p
0.32Vp-p
㉚ 0.9Vp-p
㉝ 0.44Vp-p
5Vp-p
1Vp-p
0.7Vp-p
14.188MHz
X620 28.3750 MHz OSC
X621 Q625 17.7MHz VXO
Q628 BUFFER
SYNC GENERATOR
PHASE COMP
DIVIDER
Q629 WINDOW PULSE GENERATOR
Q624 (1/2) 6dB/0dB SWITCH
Q623 AGC DET
Q624 (1/2) AGC SWITCH
Q630 AGC CONT BUFFER
FL701 LPF
Q701 BUFFER
RV707 C1 GAIN
RV705 C2 GAIN
RV706 Y1 GAIN
Q002,003 MIX
14.3MHz BPF
Q001 BUFFER
F702 LPF
Q702 BUFFER
RV701 Y GAIN
Q004 BUFFER
Q005 LPF
FL704,705 DELAY
Q006 BUFFER
Q007 LPF
Q010 BLANKING
HD MIX
Q708,709 CLAMP
Q009 (1/2) BUFFER
Q008 (1/2) BUFFER
RV709 B GAIN
RV708 R GAIN
RV710 CHROMA LEVEL
MATRIX
YL MATRIX 2
YL MATRIX 1
GATE
Q710 BLK
RV722 BURST LEVEL
RV721 HUE
MODULATOR
FL706 0.18μsec DELAY
RV727 SHP LEVEL
RV717 Y LEVEL
GAIN CONTROL
WHITE CLIP

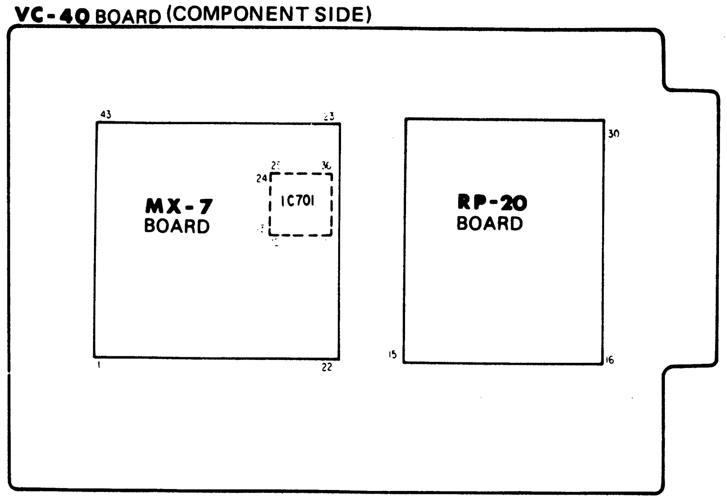

MX-7 BOARD ⑨, ⑩
0.1Vp-p
MX-7 BOARD ⑦, ⑧
0.15Vp-p
MX-7 BOARD ㉓
0.28Vp-p
MX-7 BOARD ㉖
0.2Vp-p
MX-7 BOARD ㉕
0.4Vp-p
MX-7 BOARD ㊱
0.2Vp-p
MX-7 BOARD ㉒
0.32Vp-p
MX-7 BOARD ㉚, ㉝
㉚ 0.9Vp-p
㉝ 0.44Vp-p
CN701
B CONT
R CONT
CN704
YLPF OUT
S2
YO
Y1
CO
C1
CN705
OFFSET MTX
YH OUT
CS Y
YL-YH
AGC MIX
ID
OFFSET PRO
G ɣ/G WB
IC001
1H DELAY
A IN
A OUT
B IN
B OUT
C IN
C OUT
D IN
D OUT
CLAMP
1H DELAY
BUFFER
Q008 (1/2)
Q009 (1/2)
Q708,709
CO OUT
DL C1 IN
C1 OUT
DL C2 IN
YO OUT
DL Y1 IN
Y1 OUT
DL Y2 IN
CLP O
GC
LPF
CLP
CR
CB
R OUT
B OUT
G OUT
DC OUT
R MTX
B MTX
ID
HD
CS GAIN
CS Y OUT
COMP
SLICE
MAX
Q006
Q007
Q010
BUFFER
BLANKING
CS Y
C BLK
VCS GAIN
HD MIX
Vdd(A)
Vdd
Vdd(D)
CLOCK
CLAMP
XDL 2
XDL 1
CLP 3
5V
(W701 ㉑)
003
Q001
BUFFER
Y DL OUT
F702
Q702
Y31 IN
Y/H IN
YL IN
Y GAIN
AGC MIX
YH OUT
YL-YH OUT
SW
Q004
Q005
FL704,705
DELAY
YH
YL-YH
YL
RV701
Y GAIN
PR-20 BOARD
(See page 135.)
RV709
B GAIN
RV708
R GAIN
RV710
CHROMA LEVEL
B GAIN
R GAIN
B CONT
R CONT
C LEVEL
C PED
Gɣ OUT
OFFSET CONT
G OUT
IC002
PROCESS
RV713
R-Y HUE
RV712
B-Y HUE
RV715
R-Y GAIN
RV714
B-Y GAIN
5V (W701 ⑭)
MATRIX
GATE DET
PED
YL MATRIX
YL MATRIX 2
LB
GATE
YL MIX
YL-YH OUT
YH OUT
C-ɣ CONT
Q001,002
LOWER LIMITER
Q007
MIX
Y-ɣ CONT
CLP 2
AGC CONT
IC001
BLANKING/CLAMP
Vcc
R-Y OUT
B-Y OUT
BLANKING
Q005
TITLE (R-Y) MIX
Q003
TITLE (B-Y) MIX
Q006
Q004
LPF
PED
C BLK
TR
TB
TY
TY MATRIX
RV711
CHROMA BLANKING LEVEL
PR-20 BOARD ㉒
PR-20 BOARD ㉑
IC701 ⑮
0.4Vp-p
IC701 ㊵
0.4Vp-p
IC701
ENCODER
R-Y
B-Y
CS-Y
CS AGC
LALT
4FSC
AF SC
HUE
BF
YL-YH
YH
MODULATOR
DET
SC
MOD
1/2
1/2 ℓ ALT
BURST GATE
BLANKING FADER SUPRESS
C OUT
C IN
FL707
3.58MHz BPF
Q705
BUFFER
Vcc(D)
Vcc(A)
5V
(W701 ⑭)
FADER
SYNC CHROMA CHARACTER MIX
SYNC CHARACTER MIX
RV720
SYNC LEVEL
RV724
TITLE
Q706,707
SHP CLP
GAIN CONTROL
WHITE CLIP
Y FADER
Y BLK
FL706
0.18μsec DELAY
D701
RV727
SHP LEVEL
RV717
Y LEVEL
RV718
WHITE CLIP
RV719
SET UP
SYNC
BLK
CLP 2
Q711
DELAY
Q710
BLK
RV722
BURST LEVEL
RV721
HVE
AGC CONT
CN702
C OUT
VIDEO OUT
Y OUT
VIDEO (VA-41)
CN703
TB
TG
TR
C BLK
TY
Y BLK
A/D Y
BACK LIGHT
VD
HD
DIGITAL TITLE (SS-36)
EN
DATA TO SLAVE
CLK
CAM STB
SYSTEM CONTROL (SS-86)
IC701 ㉔
IC701 ㉖
0.32Vp-p
IC701 ⑯
2.8Vp-p
IC701 ㉒
1Vp-p
IC701 ⑳
1Vp-p

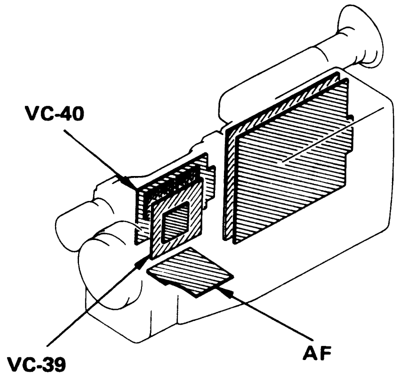
VC-38 BOARD (CONDUCTOR SIDE)


IC852
IC600
IC853
IC850
IC851

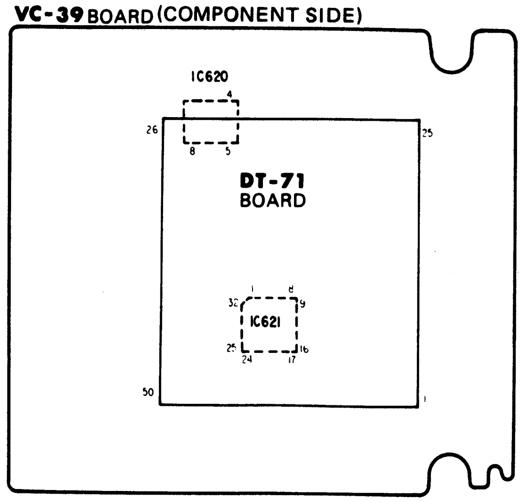


VC-40 BOARD (COMPONENT SIDE)


MX-7
BOARD
IC701
RP-20
BOARD


VC-40
VC-39
AF

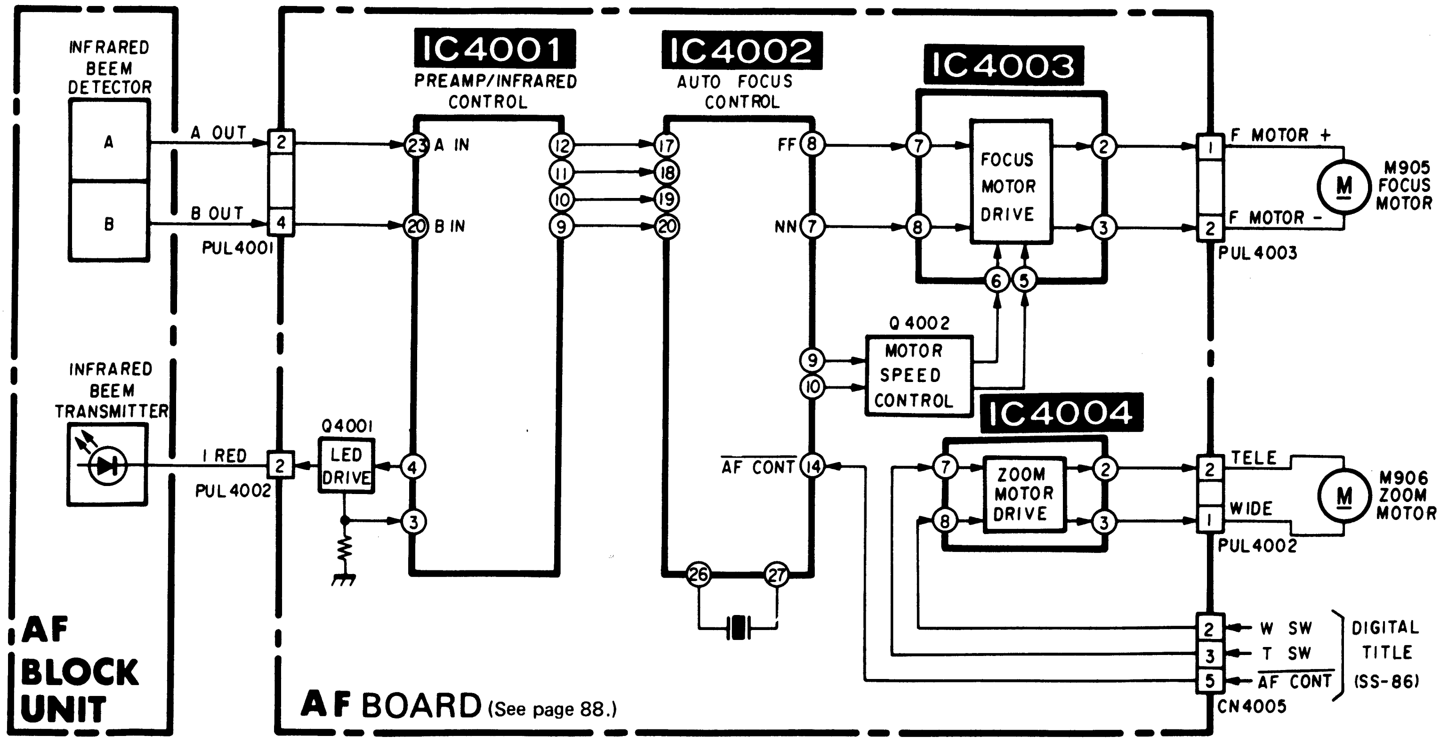
VC-39 BOARD (COMPONENT SIDE)


IC620
DT-71
BOARD
IC621

- Components on the rear side indicated by "- - -" line.

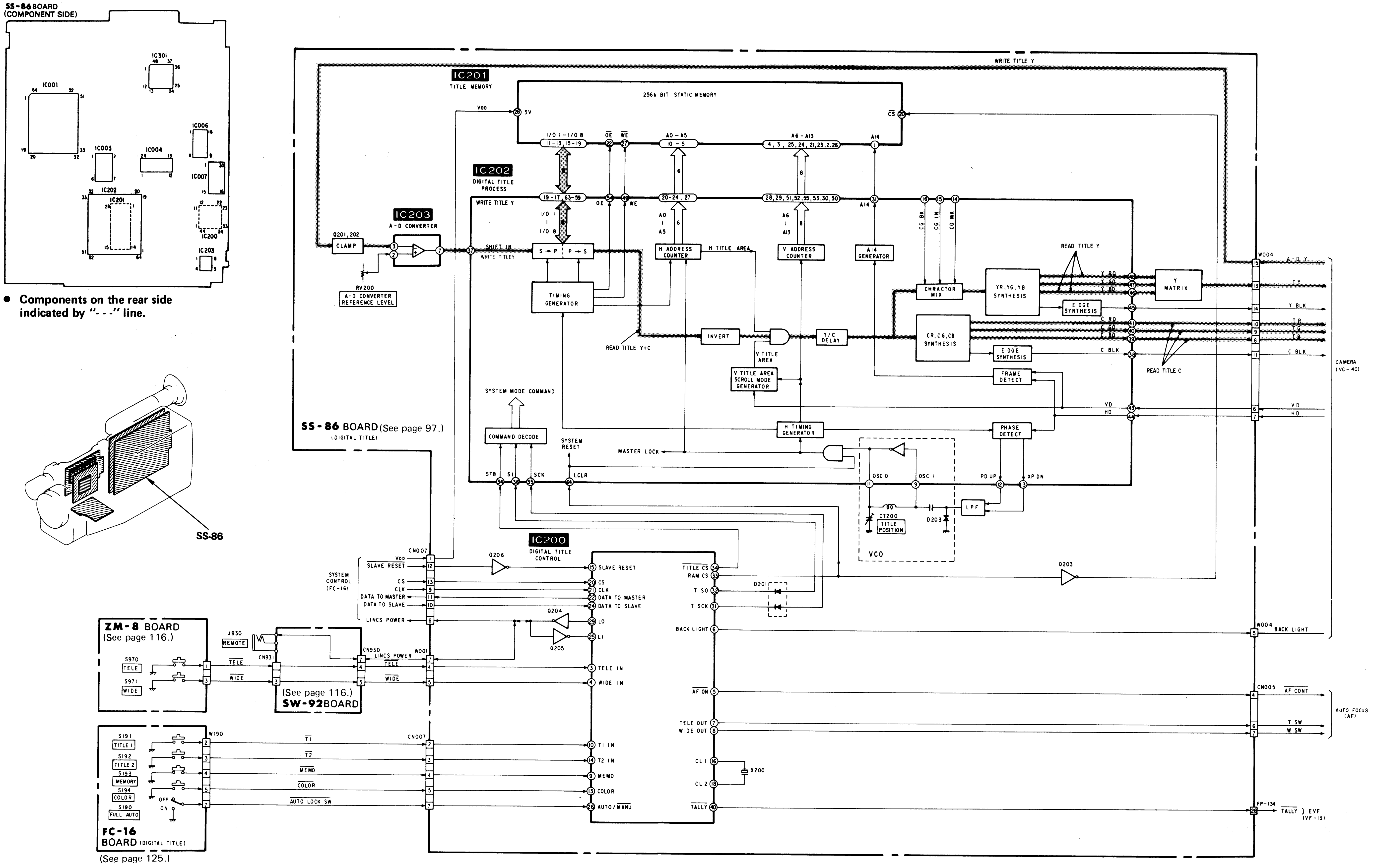
3-4. AUTO FOCUS BLOCK DIAGRAM

- ( ) near the board name indicates the schematic diagram page.


INFRARED BEEM DETECTOR
A
B
A OUT
B OUT
PUL4001
INFRARED BEEM TRANSMITTER
I RED
PUL4002
AF BLOCK UNIT
IC4001
PREAMP/INFRARED CONTROL
A IN
B IN
Q4001
LED DRIVE
IC4002
AUTO FOCUS CONTROL
FF
NN
AF CONT
IC4003
FOCUS MOTOR DRIVE
Q4002
MOTOR SPEED CONTROL
IC4004
ZOOM MOTOR DRIVE
F MOTOR +
F MOTOR −
PUL4003
M905 FOCUS MOTOR
TELE
WIDE
PUL4002
M906 ZOOM MOTOR
W SW
T SW
AF CONT
CN4005
DIGITAL TITLE (SS-86)
AF BOARD (See page 88.)

3-5. DIGITAL TITLER BLOCK DIAGRAM

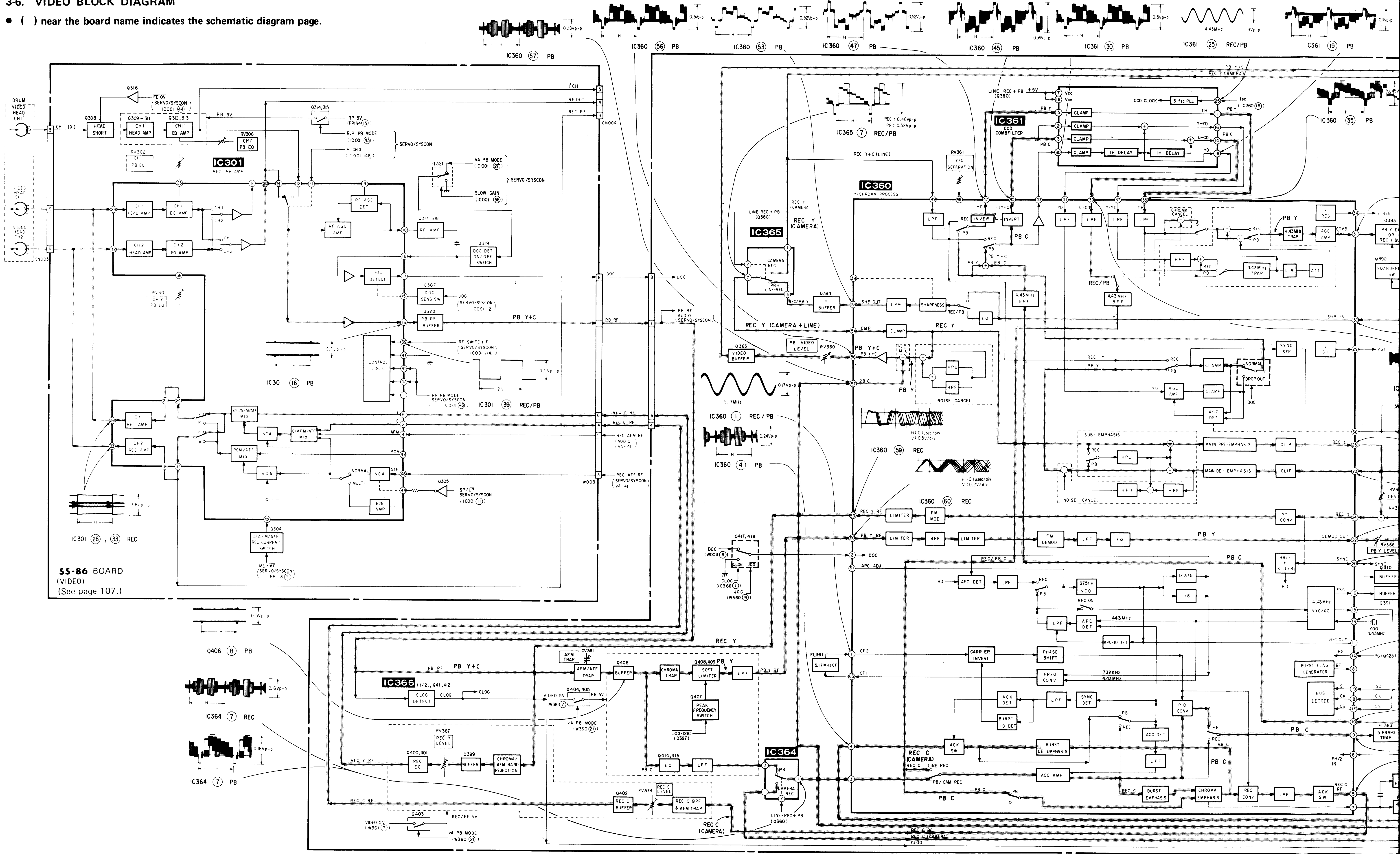
- ( ) near the board name indicates the schematic diagram page.

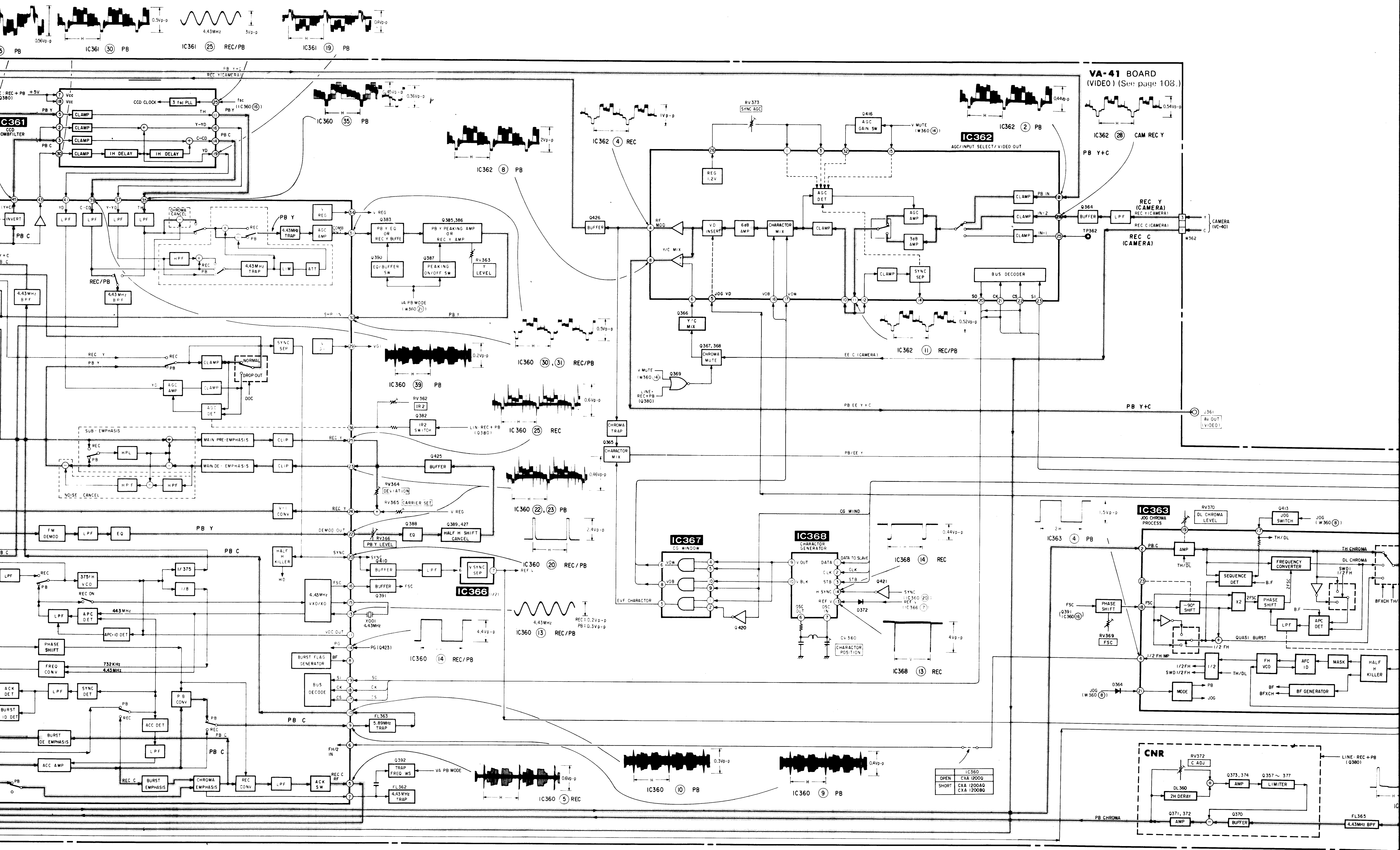

SS-86 BOARD
(COMPONENT SIDE)
IC301
IC001
IC003
IC004
IC006
IC007
IC202
IC201
IC200
IC203
SS-86
IC201
TITLE MEMORY
256k BIT STATIC MEMORY
VDD
5V
I/O 1 – I/O 8
OE
WE
A0 – A5
A6 – A13
A14
CS
IC202
DIGITAL TITLE PROCESS
WRITE TITLE Y
IC203
A-D CONVERTER
Q201, 202
CLAMP
RV200
A-D CONVERTER REFERENCE LEVEL
SHIFT IN
WRITE TITLEY
S → P
P → S
TIMING GENERATOR
H ADDRESS COUNTER
H TITLE AREA
V ADDRESS COUNTER
A14 GENERATOR
CG BK
CG IN
CG MK
READ TITLE Y
CHRACTOR MIX
YR, YG, YB SYNTHESIS
Y RO
Y GO
Y BO
Y MATRIX
E DGE SYNTHESIS
READ TITLE Y+C
INVERT
V TITLE AREA
V TITLE AREA SCROLL MODE GENERATOR
Y/C DELAY
CR, CG, CB SYNTHESIS
C RO
C GO
C BO
C BLK
FRAME DETECT
READ TITLE C
WRITE TITLE Y
W004
A-D Y
T Y
Y BLK
T R
T G
T B
C BLK
CAMERA (VC-40)
VD
HD
SYSTEM MODE COMMAND
COMMAND DECODE
SYSTEM RESET
MASTER LOCK
H TIMING GENERATOR
PHASE DETECT
STB
SI
SCK
LCLR
OSC O
OSC I
PD UP
XP DN
LPF
CT200
TITLE POSITION
D203
VCO
SS-86 BOARD (See page 97.)
(DIGITAL TITLE)
IC200
DIGITAL TITLE CONTROL
CN007
VDD
SLAVE RESET
CS
CLK
DATA TO MASTER
DATA TO SLAVE
LINCS POWER
SYSTEM CONTROL (FC-16)
Q206
SLAVE RESET
CS
CLK
DATA TO MASTER
DATA TO SLAVE
Q204
LO
LI
Q205
TITLE CS
RAM CS
T SO
T SCK
D201
Q203
BACK LIGHT
W004
BACK LIGHT
ZM-8 BOARD (See page 116.)
S970 TELE
S971 WIDE
J930 REMOTE
CN931
TELE
WIDE
CN930
LINCS POWER
W001
(See page 116.)
SW-92 BOARD
TELE IN
WIDE IN
AF ON
CN005
AF CONT
AUTO FOCUS (AF)
TELE OUT
WIDE OUT
T SW
W SW
S191 TITLE 1
S192 TITLE 2
S193 MEMORY
S194 COLOR
S190 FULL AUTO
OFF
ON
W190
T1
T2
MEMO
COLOR
AUTO LOCK SW
CN007
T1 IN
T2 IN
MEMO
COLOR
AUTO/MANU
CL1
CL2
X200
TALLY
FP-134
TALLY
EVF (VF-13)
FC-16 BOARD (DIGITAL TITLE)
(See page 125.)

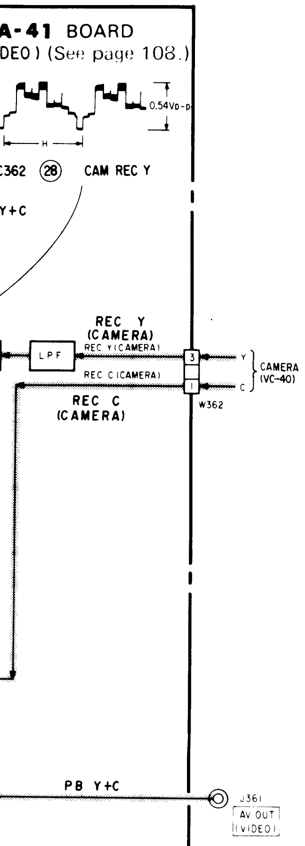
- Components on the rear side indicated by "- - -" line.

3-6. VIDEO BLOCK DIAGRAM

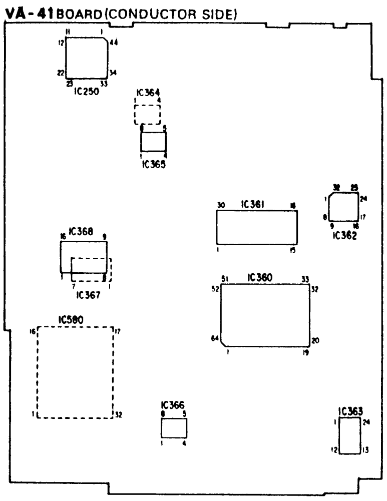
- ( ) near the board name indicates the schematic diagram page.


IC360 ⑰ PB
IC360 ㊻ PB
IC360 ㊸ PB
IC360 ㊼ PB
IC360 ㊺ PB
IC361 ㉚ PB
IC361 ㉕ REC/PB
IC361 ⑲ PB
IC360 ㉟ PB
IC365 ⑦ REC/PB
DRUM
VIDEO HEAD CH1
VIDEO HEAD CH2
CN003
CN004
W003
Q308 HEAD SHORT
Q309-311 CH1 HEAD AMP
Q312,313 CH1 EQ AMP
RV306 CH1 PB EQ
RV302 CH1 PB EQ
RV301 CH2 PB EQ
Q316
FE ON (SERVO/SYSCON) (IC001 ㊹)
PB 5V
Q314,315
RP 5V (FP134 ⑮)
R.P PB MODE (IC001 ㊸)
H CHG (IC001 ㊽)
SERVO/SYSCON
IC301
REC/PB AMP
CH1 HEAD AMP
CH1 EQ AMP
CH2 HEAD AMP
CH2 EQ AMP
RF AGC DET
RF AGC AMP
Q317,318 RF AMP
Q319 DOC DET ON/OFF SWITCH
Q321
VA PB MODE (IC001 ㉗)
SLOW GAIN (IC001 ㊱)
DOC DETECT
Q307 DOC SENS SW
JOG (SERVO/SYSCON) (IC001 12)
Q320 PB RF BUFFER
CONTROL LOGIC
RF SWITCH P (SERVO/SYSCON) (IC001 14)
RP PB MODE SERVO/SYSCON (IC001 ㊸)
IC301 ⑯ PB
IC301 ㊴ REC/PB
CH1 REC AMP
CH2 REC AMP
Y/C/AFM/ATF MIX
VCA
C/AFM/ATF MIX
PCM/ATF MIX
NORMAL
MULTI
6dB AMP
Q305
SP/LP SERVO/SYSCON (IC001 ⑪)
Q304 C/AFM/ATF REC CURRENT SWITCH
ME/MP (SERVO/SYSCON) (FP118 ㉑)
IC301 ㉘, ㉝ REC
SS-86 BOARD (VIDEO) (See page 107.)
I'CH
RF OUT
REC RF
DOC
PB RF
PB Y+C
PB RF AUDIO SERVO/SYSCON
REC Y RF
REC C RF
AFM
REC AFM RF (AUDIO VA-4)
REC ATF RF (SERVO/SYSCON) (VA-4)
LINE: REC+PB +5V (Q380)
CCD CLOCK
3 fsc PLL
fsc (IC360 ⑯)
IC361 CCD COMBFILTER
CLAMP
1H DELAY
TH
Y-YD
C-CD
PB C
PB Y
YD
REC Y+C (LINE)
RV361 Y/C SEPARATION
IC360 Y/CHROMA PROCESS
LPF
INVER
INVERT
HPF
4.43MHz TRAP
AGC AMP
COMB
CHROMA CANCEL
LIM
ATT
4.43MHz BPF
REC/PB
V REG
Q383 PB Y EQ OR REC Y BUF
Q390 EQ/BUFFER SW
LINE REC + PB (Q380)
REC Y (CAMERA)
IC365
CAMERA REC
PB+ LINE+REC
Q394 Y BUFFER
REC/PB Y
SHP OUT
SHARPNESS
EQ
REC Y (CAMERA + LINE)
EMP
REC Y
Q383 VIDEO BUFFER
PB VIDEO LEVEL RV360
PB Y+C
Y/C MIX
HPU
HPF
NOISE CANCEL
SYNC SEP
NORMAL
DROP OUT
AGC DET
SUB-EMPHASIS
HPL
MAIN PRE-EMPHASIS
MAIN DE-EMPHASIS
CLIP
NOISE CANCEL
IC360 ① REC/PB
IC360 ④ PB
IC360 ㊾ REC
IC360 ㊿ REC
H:0.1μsec/div V:0.5V/div
H:0.1μsec/div V:0.2V/div
5.17MHz
DOC (W003 ⑧)
Q417,418
CLOG (IC366 ①)
JOG (W360 ⑨)
APC ADJ
LIMITER
FM MOD
BPF
FM DEMOD
V-I CONV
DEMOD OUT
RV366 PB Y LEVEL
SYNC
HALF H KILLER
HD
AFC DET
375fH VCO
REC ON
1/375
1/8
APC DET
443MHz
APC-ID DET
4.43MHz VXO/XO
X001 4.43MHz
Q410 BUFFER
Q391 BUFFER
FSC
VOC OUT
PG (Q423)
BURST FLAG GENERATOR
BUS DECODE
SI
CK
CS
FL363 5.89MHz TRAP
FH/2 IN
FL361 5.17MHz CF
CF2
CF1
CARRIER INVERT
PHASE SHIFT
FREQ CONV
732KHz 4.43MHz
ACK DET
SYNC DET
BURST ID DET
PB CONV
ACC DET
ACK SW
BURST DE EMPHASIS
ACC AMP
BURST EMPHASIS
CHROMA EMPHASIS
REC CONV
REC C RF
REC C (CAMERA)
REC C LINE REC
PB/CAM REC
PB C
Q406 ⑧ PB
Q406 BUFFER
AFM TRAP
CV361
AFM/ATF TRAP
CHROMA TRAP
Q408,409 SOFT LIMITER
Q407 PEAK FREQUENCY SWITCH
JOG-DOC (Q397)
Q414,415 EQ
IC366
Q404,405
VIDEO 5V (W361 ⑦)
VA PB MODE (W360 ㉑)
CLOG DETECT
CLOG
RV367 REC Y LEVEL
Q400,401 REC EQ
Q399 BUFFER
CHROMA/AFM BAND REJECTION
Q402 REC C BUFFER
RV374 REC C LEVEL
REC C BPF & AFM TRAP
Q403
REC/EE 5V
IC364
CAMERA REC
LINE+REC+PB (Q360)
IC364 ⑦ REC
IC364 ⑦ PB
REC C RF
REC C (CAMERA)
CLOG

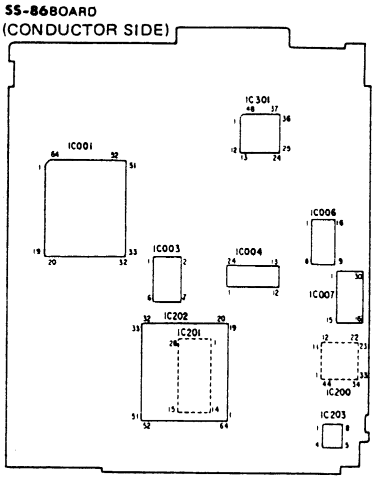

VA-41 BOARD
(VIDEO) (See page 108.)
IC361 (30) PB
IC361 (25) REC/PB
IC361 (19) PB
IC360 (35) PB
IC362 (8) PB
IC362 (4) REC
IC362 (2) PB
IC362 (28) CAM REC Y
IC362 (11) REC/PB
IC360 (30),(31) REC/PB
IC360 (39) PB
IC360 (25) REC
IC360 (22),(23) PB
IC360 (20) REC/PB
IC360 (13) REC/PB
IC360 (14) REC/PB
IC360 (10) PB
IC360 (9) PB
IC360 (5) REC
IC363 (4) PB
IC368 (14) REC
IC368 (13) REC
IC361
CCD COMBFILTER
IC362
AGC/INPUT SELECT/VIDEO OUT
IC363
JOG CHROMA PROCESS
IC366
IC367
CG WINDOW
IC368
CHARACTOR GENERATOR
CNR
CLAMP
1H DELAY
3 fsc PLL
CCD CLOCK
INVERT
LPF
BPF
HPF
4.43MHz TRAP
LIM
ATT
AGC AMP
REG
PB Y EQ OR REC Y BUFFE
PB Y PEAKING AMP OR REC Y AMP
EQ/BUFFER SW
PEAKING ON/OFF SW
Y LEVEL
SYNC SEP
NORMAL
DROP OUT
AGC DET
SUB-EMPHASIS
MAIN PRE-EMPHASIS
MAIN DE-EMPHASIS
NOISE CANCEL
CLIP
BUFFER
DEVIATION
CARRIER SET
V-I CONV
FM DEMOD
EQ
PB Y LEVEL
HALF H SHIFT CANCEL
HALF H KILLER
4.43MHz VXO/XO
V SYNC SEP
BURST FLAG GENERATOR
BUS DECODE
5.89MHz TRAP
TRAP FREQ WS
4.43MHz TRAP
375fH VCO
1/375
1/8
APC DET
APC-ID DET
PHASE SHIFT
FREQ CONV
732KHz
4.43MHz
ACK DET
SYNC DET
BURST ID DET
BURST DE EMPHASIS
ACC AMP
ACC DET
PB CONV
BURST EMPHASIS
CHROMA EMPHASIS
REC CONV
ACK SW
IR2 SWITCH
VD INSERT
6dB AMP
CHARACTOR MIX
3dB AMP
AGC GAIN SW
SYNC AGC
BUS DECODER
Y/C MIX
CHROMA MUTE
CHROMA TRAP
CAMERA (VC-40)
AV OUT (VIDEO)
PB Y+C
REC Y (CAMERA)
REC C (CAMERA)
EE C (CAMERA)
PB EE Y+C
PB/EE Y
CG WIND
EVF CHARACTOR
DATA TO SLAVE
CHARACTOR POSITION
DL CHROMA LEVEL
JOG SWITCH
SEQUENCE DET
FREQUENCY CONVERTER
-90° SHIFT
X2
PHASE SHIFT
QUASI BURST
FH VCO
AFC ID
MASK
HALF H KILLER
MODE
BF GENERATOR
2H DERAY
LIMITER
4.43MHz BPF
PB CHROMA
LINE-REC+PB (Q380)
IC360
OPEN CXA1200Q
SHORT CXA1200AQ CXA1200BQ



A-41 BOARD
DEO) (See page 108.)
0.54Vp-p
H
C362 (28) CAM REC Y
Y+C
REC Y
(CAMERA)
LPF
REC Y (CAMERA)
REC C (CAMERA)
REC C
(CAMERA)
3
1
Y
C
CAMERA
(VC-40)
W362
PB Y+C
J361
AV OUT
(VIDEO)

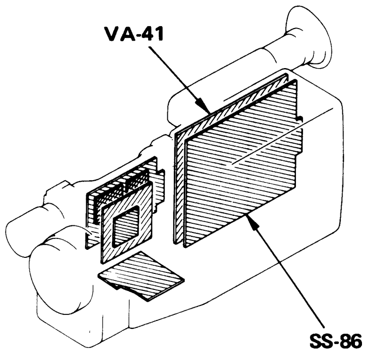


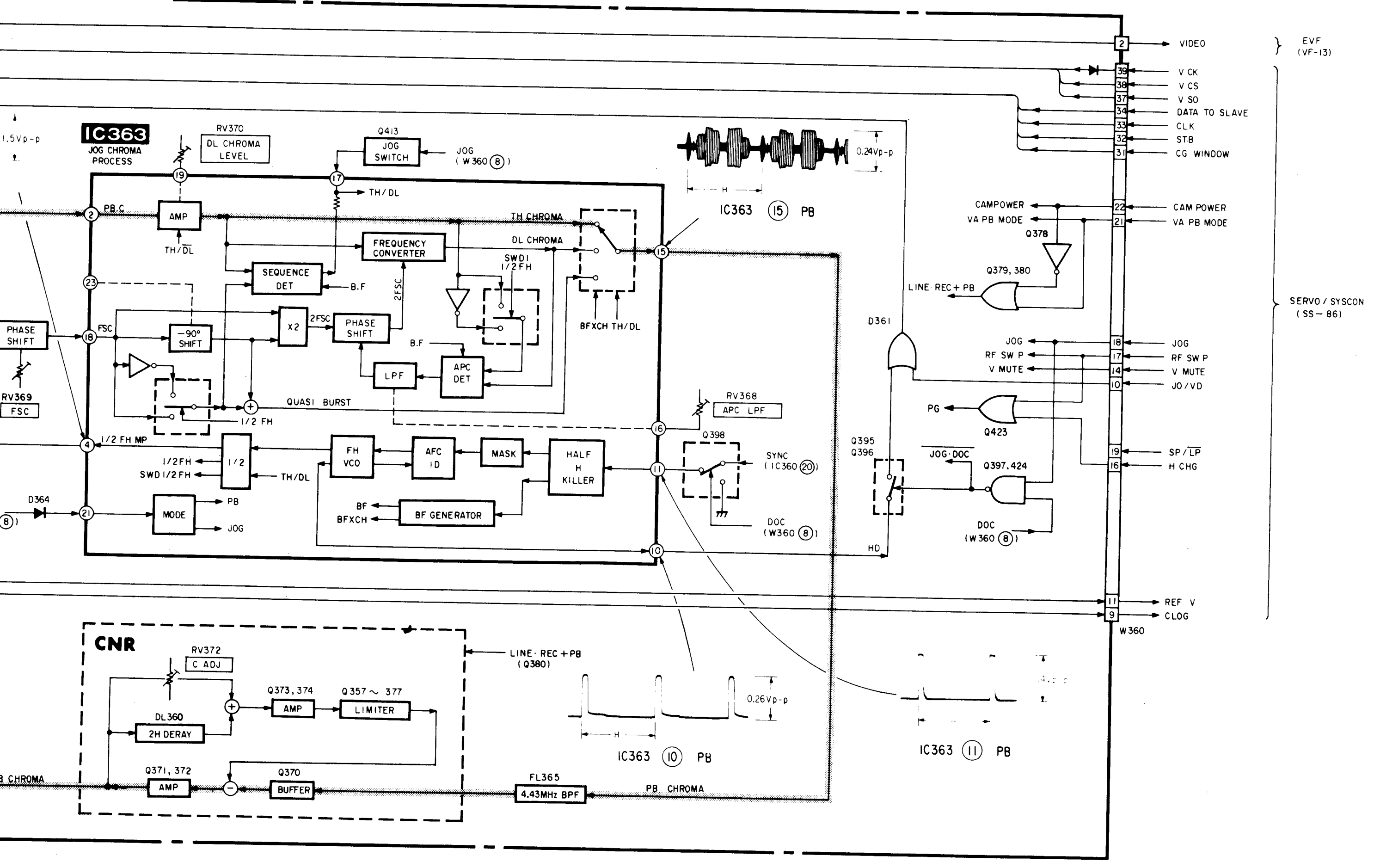
VA-41 BOARD (CONDUCTOR SIDE)
IC250
IC364
IC365
IC361
IC362
IC368
IC367
IC360
IC580
IC366
IC363



SS-86 BOARD
(CONDUCTOR SIDE)
IC301
IC001
IC006
IC003
IC004
IC007
IC202
IC201
IC200
IC203

- **Components on the rear side indicated by "- - -" line.**



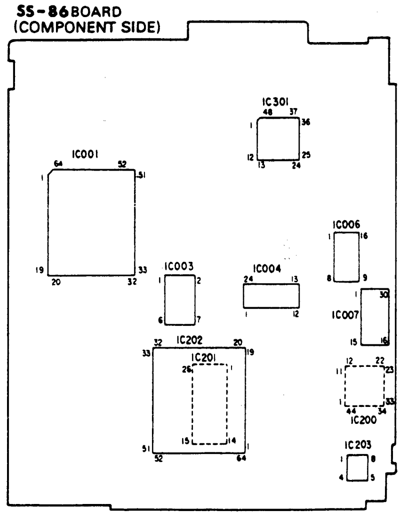


1.5Vp-p
IC363
JOG CHROMA PROCESS
RV370
DL CHROMA LEVEL
Q413
JOG SWITCH
JOG (W360 (8))
0.24Vp-p
H
IC363 (15) PB
TH/DL
PB.C
AMP
TH/DL
TH CHROMA
DL CHROMA
FREQUENCY CONVERTER
SWD1 1/2FH
SEQUENCE DET
B.F
2FSC
PHASE SHIFT
FSC
-90° SHIFT
X2
PHASE SHIFT
B.F
APC DET
LPF
BFXCH TH/DL
RV369
FSC
QUASI BURST
1/2 FH
RV368
APC LPF
1/2 FH MP
1/2FH
SWD 1/2 FH
1/2
TH/DL
FH VCO
AFC ID
MASK
HALF H KILLER
Q398
SYNC (IC360 (20))
D364
MODE
PB
JOG
BF
BFXCH
BF GENERATOR
DOC (W360 (8))
HD
CAMPOWER
VA PB MODE
Q378
Q379, 380
LINE·REC+PB
D361
JOG
RF SW P
V MUTE
PG
Q423
Q395
Q396
JOG·DOC
Q397, 424
DOC (W360 (8))
VIDEO
EVF (VF-13)
V CK
V CS
V SO
DATA TO SLAVE
CLK
STB
CG WINDOW
CAM POWER
VA PB MODE
SERVO / SYSCON (SS-86)
JOG
RF SW P
V MUTE
JO/VD
SP/LP
H CHG
REF V
CLOG
W360
CNR
RV372
C ADJ
DL360
2H DERAY
Q373, 374
AMP
Q357 ~ 377
LIMITER
LINE·REC+PB (Q380)
0.26Vp-p
H
IC363 (10) PB
IC363 (11) PB
B CHROMA
Q371, 372
AMP
Q370
BUFFER
FL365
4.43MHz BPF
PB CHROMA

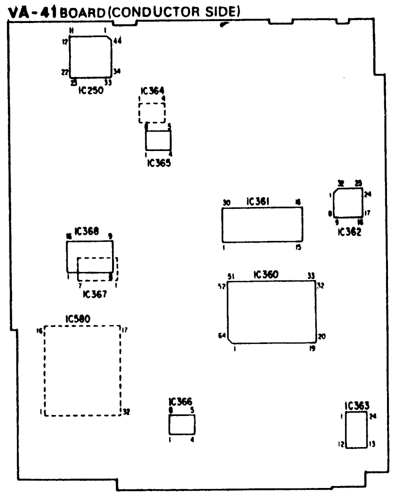
3-7. SERVO/SYSTEM CONTROL BLOCK DIAGRAM

- **( ) near the board name indicates the schematic diagram page.**

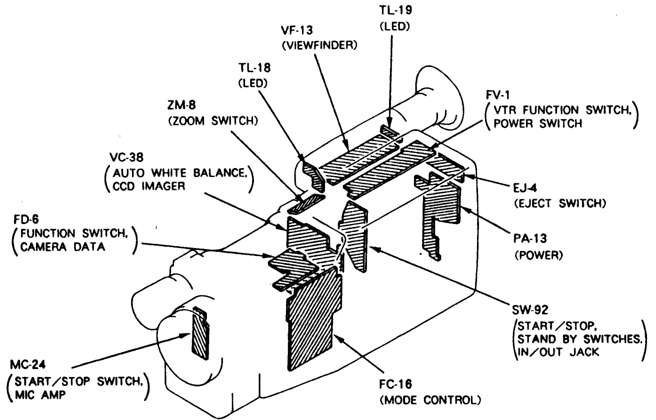
SS-86 BOARD (COMPONENT SIDE)

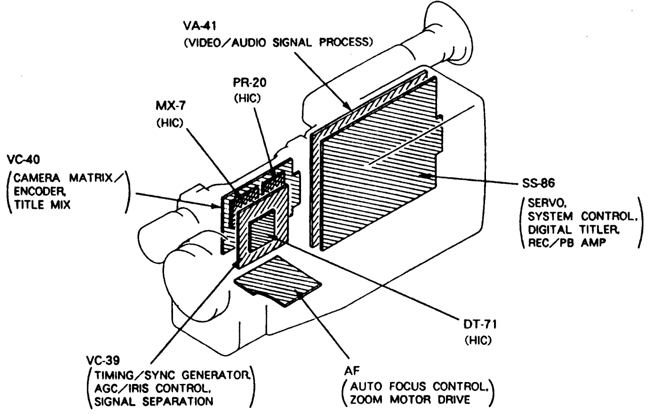

IC001
IC301
IC003
IC004
IC006
IC007
IC202
IC201
IC200
IC203

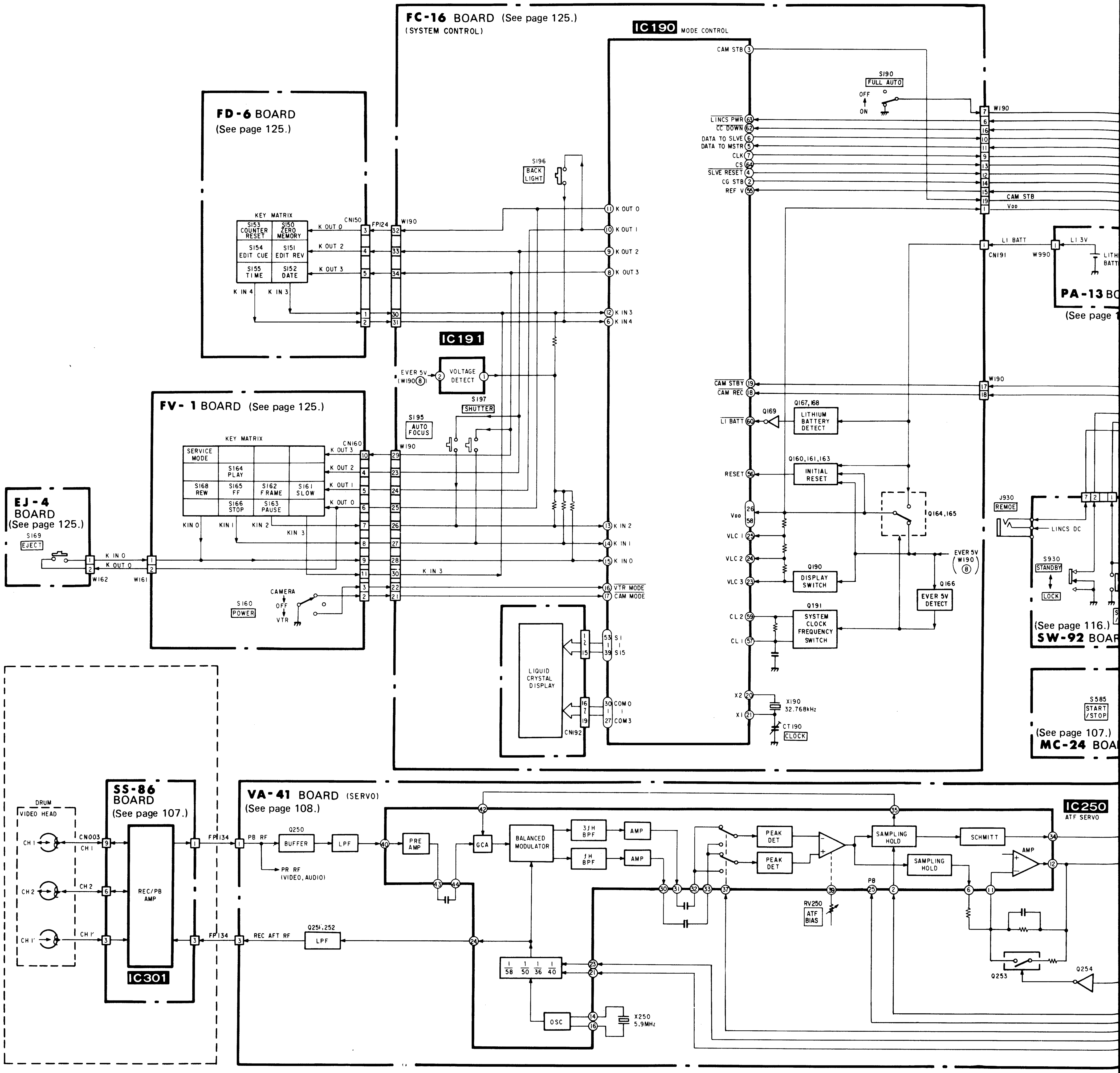
VA-41 BOARD (CONDUCTOR SIDE)

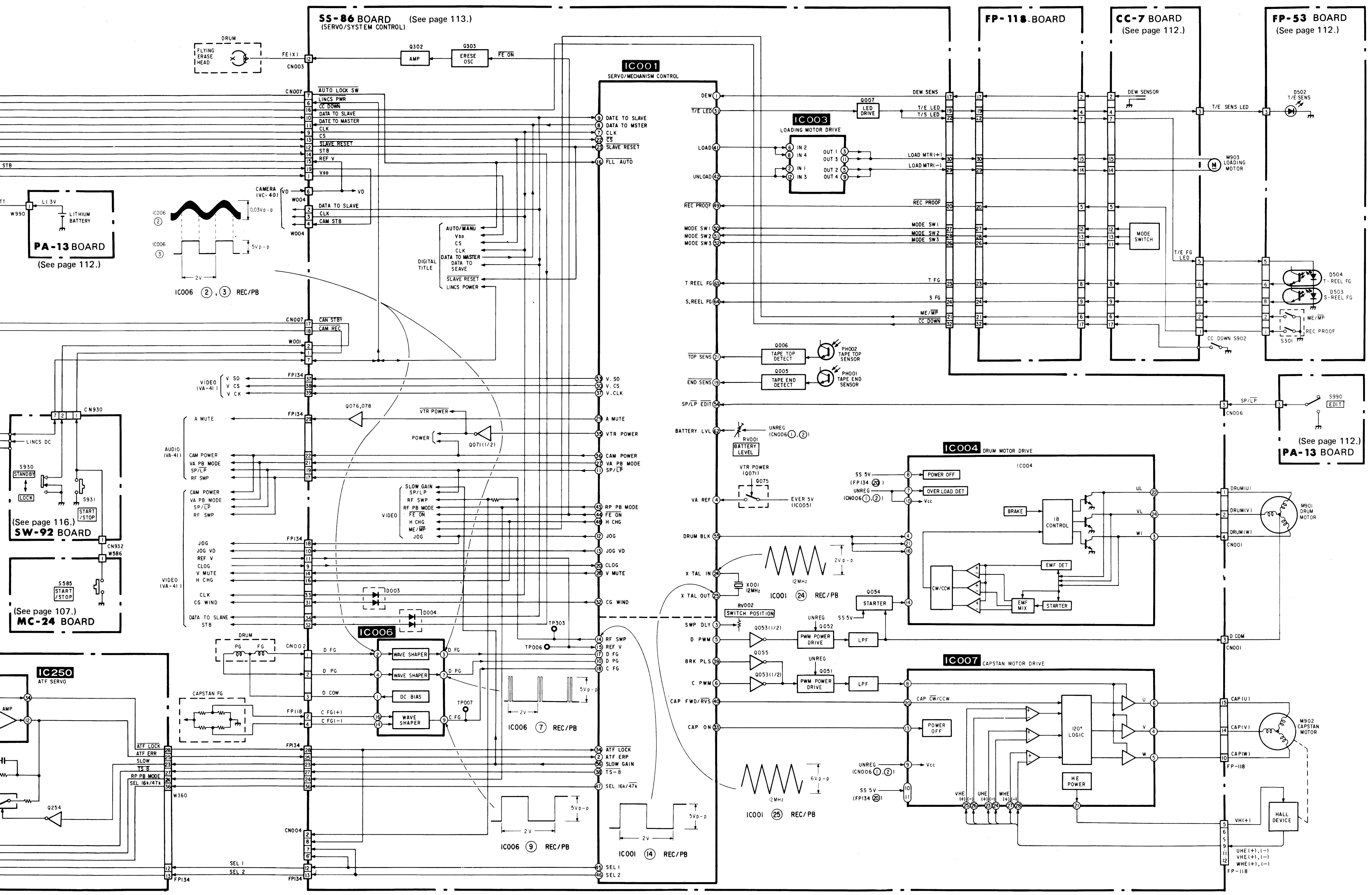

IC250
IC364
IC365
IC361
IC362
IC368
IC367
IC360
IC580
IC366
IC363

- **Components on the rear side indicated by "- - -" line.**


TL-19 (LED)
VF-13 (VIEWFINDER)
TL-18 (LED)
ZM-8 (ZOOM SWITCH)
FV-1 (VTR FUNCTION SWITCH, POWER SWITCH)
VC-38 (AUTO WHITE BALANCE, CCD IMAGER)
EJ-4 (EJECT SWITCH)
FD-6 (FUNCTION SWITCH, CAMERA DATA)
PA-13 (POWER)
SW-92 (START/STOP, STAND BY SWITCHES, IN/OUT JACK)
MC-24 (START/STOP SWITCH, MIC AMP)
FC-16 (MODE CONTROL)


VA-41 (VIDEO/AUDIO SIGNAL PROCESS)
PR-20 (HIC)
MX-7 (HIC)
VC-40 (CAMERA MATRIX, ENCODER, TITLE MIX)
SS-86 (SERVO, SYSTEM CONTROL, DIGITAL TITLER, REC/PB AMP)
DT-71 (HIC)
VC-39 (TIMING/SYNC GENERATOR, AGC/IRIS CONTROL, SIGNAL SEPARATION)
AF (AUTO FOCUS CONTROL, ZOOM MOTOR DRIVE)


FC-16 BOARD (See page 125.)
(SYSTEM CONTROL)
IC190 MODE CONTROL
FD-6 BOARD (See page 125.)
KEY MATRIX
S153 COUNTER RESET
S150 ZERO MEMORY
S154 EDIT CUE
S151 EDIT REV
S155 TIME
S152 DATE
CN150
FP124
W190
S196 BACK LIGHT
S190 FULL AUTO
OFF
ON
IC191
VOLTAGE DETECT
EVER 5V
S195 AUTO FOCUS
S197 SHUTTER
FV-1 BOARD (See page 125.)
KEY MATRIX
CN160
SERVICE MODE
S164 PLAY
S168 REW
S165 FF
S162 FRAME
S161 SLOW
S166 STOP
S163 PAUSE
CAMERA
VTR
S160 POWER
EJ-4 BOARD (See page 125.)
S169 EJECT
W162
W161
LIQUID CRYSTAL DISPLAY
CN192
CAM STB
LINCS PWR
CC DOWN
DATA TO SLVE
DATA TO MSTR
CLK
CS
SLVE RESET
CG STB
REF V
K OUT 0
K OUT 1
K OUT 2
K OUT 3
K IN 0
K IN 1
K IN 2
K IN 3
K IN 4
VTR MODE
CAM MODE
CAM STBY
CAM REC
LI BATT
Q169
Q167, 168 LITHIUM BATTERY DETECT
Q160, 161, 163 INITIAL RESET
RESET
Q164, 165
VDD
VLC 1
VLC 2
VLC 3
Q190 DISPLAY SWITCH
Q166 EVER 5V DETECT
Q191 SYSTEM CLOCK FREQUENCY SWITCH
CL 2
CL 1
X190 32.768kHz
CT190 CLOCK
S1
S15
COM 0
COM 3
CN191
W990
LI 3V
LITH BATT
PA-13 BO
(See page 1
J930 REMOE
LINCS DC
S930 STANDBY
LOCK
(See page 116.)
SW-92 BOAR
S585 START/STOP
(See page 107.)
MC-24 BOA
DRUM
VIDEO HEAD
CH 1
CH 2
CH 1'
CN003
SS-86 BOARD (See page 107.)
REC/PB AMP
IC301
FP134
VA-41 BOARD (SERVO)
(See page 108.)
PB RF
Q250 BUFFER
LPF
PR RF (VIDEO, AUDIO)
PRE AMP
GCA
BALANCED MODULATOR
3/4 H BPF
1/4 H BPF
AMP
PEAK DET
SAMPLING HOLD
SCHMITT
RV250 ATF BIAS
REC AFT RF
Q251, 252 LPF
1/58 1/50 1/36 1/40
OSC
X250 5.9MHz
Q253
Q254
IC250 ATF SERVO


SS-86 BOARD (See page 113.)
(SERVO/SYSTEM CONTROL)
FP-118 BOARD
CC-7 BOARD (See page 112.)
FP-53 BOARD (See page 112.)
PA-13 BOARD (See page 112.)
SW-92 BOARD (See page 116.)
MC-24 BOARD (See page 107.)
IC001 SERVO/MECHANISM CONTROL
IC003 LOADING MOTOR DRIVE
IC004 DRUM MOTOR DRIVE
IC006
IC007 CAPSTAN MOTOR DRIVE
IC250 ATF SERVO
DRUM FLYING ERASE HEAD
Q302 AMP
Q303 ERESE OSC
FE ON
FE(X)
CN003
CN007
AUTO LOCK SW
LINCS PWR
CC DOWN
DATA TO SLAVE
DATA TO MASTER
CLK
CS
SLAVE RESET
STB
REF V
VDD
CAMERA (VC-40)
VD
W004
CAM STB
DIGITAL TITLE
AUTO/MANU
DATA TO SEAVE
LINCS POWER
DATE TO SLAVE
DATA TO MSTER
FLL AUTO
LITHIUM BATTERY
L1 3V
W990
IC006 ②, ③ REC/PB
0.03Vp-p
5Vp-p
2V
CAN STBY
CAM REC
W001
VIDEO (VA-41)
V SO
V CS
V CK
FP134
A MUTE
VTR POWER
POWER
Q076,078
Q071(1/2)
AUDIO (VA-41)
CAM POWER
VA PB MODE
SP/LP
RF SWP
SLOW GAIN
RF PB MODE
FE ON
H CHG
ME/MP
JOG
JOG VD
CLOG
V MUTE
CG WIND
DATA TO SLANE
D003
D004
CN930
LINCS DC
S930 STANDBY
LOCK
S931 START/STOP
CN932
W586
S585 START/STOP
DRUM PG FG
CN002
D FG
D PG
D COW
WAVE SHAPER
DC BIAS
CAPSTAN FG
FP118
C FG(+)
C FG(-)
C FG
TP303
TP006
TP007
IC006 ⑦ REC/PB
IC006 ⑨ REC/PB
IC001 ⑭ REC/PB
ATF LOCK
ATF ERR
SLOW
TS B
RP PB MODE
SEL 16k/47k
SLOW GAIN
TS-B
W360
Q254
AMP
CN004
SEL 1
SEL 2
DEW
T/E LED
LOAD
UNLOAD
REC PROOF
MODE SW1
MODE SW2
MODE SW3
T REEL FG
S.REEL FG
Q007 LED DRIVE
DEW SENS
T/E LED
T/S LED
IN 2
IN 4
IN 1
IN 3
OUT 1
OUT 3
OUT 2
OUT 4
LOAD MTR(+)
LOAD MTR(-)
MODE SW1
MODE SW2
MODE SW3
T FG
S FG
ME/MP
CC DOWN
DEW SENSOR
MODE SWITCH
T/E SENS LED
D502 T/E SENS
M903 LOADING MOTOR
T/E FG LED
D504 T-REEL FG
D503 S-REEL FG
ME/MP
REC PROOF
S301
CC DOWN S902
TOP SENS
Q006 TAPE TOP DETECT
PH002 TAPE TOP SENSOR
END SENS
Q005 TAPE END DETECT
PH001 TAPE END SENSOR
SP/LP EDIT
CN006
S990 EDIT
BATTERY LVL
RV001 BATTERY LEVEL
UNREG (CN006①,②)
VTR POWER (Q071)
Q075
EVER 5V (IC005)
VA REF
DRUM BLK
X TAL IN
X TAL OUT
X001 12MHz
2Vp-p
12MHz
IC001 ㉔ REC/PB
RV002 SWITCH POSITION
SWP DLY
D PWM
BRK PLS
C PWM
CAP FWD/RVS
CAP ON
Q053(1/2)
Q055
Q052
Q051
PWM POWER DRIVE
LPF
Q054 STARTER
SS 5V
(FP134 ⑳)
POWER OFF
OVER LOAD DET
Vcc
BRAKE
IB CONTROL
EMF DET
CW/CCW
EMF MIX
STARTER
UL
VL
WL
DRUM(U)
DRUM(V)
DRUM(W)
M901 DRUM MOTOR
CN001
D COM
IC001 ㉕ REC/PB
6Vp-p
CAP CW/CCW
120° LOGIC
HE POWER
U
V
W
CAP(U)
CAP(V)
CAP(W)
M902 CAPSTAN MOTOR
FP-118
VHE UHE WHE
VH(+)
HALL DEVICE
UHE(+),(-)
VHE(+),(-)
WHE(+),(-)

3-8. MECHANISM CONTROLLER (µPD78112-GF)

This is the 8-bit, single chip microprocessor having the following characteristics.

- µCOM-78K/I
- high speed instruction execution
  Instruction cycle : 333ns/12MHz
- On-chip memory mapping for peripheral hardware (special function register)
- On-chip high function interrupt controller
  Two kinds of processing forms (vector interrupt function/macro service function)
- On-chip high precision A/D converter
  8 bit precision : 8 analog inputs
  One analog input conversion time : 26.7µs/12MHz
- On-chip hardware suitable for servo control of VTR, etc. (servo control unit)
  16 bit free running counter + capture register x 2
  special pulse output control function
  12 bit precision PWM output x 2

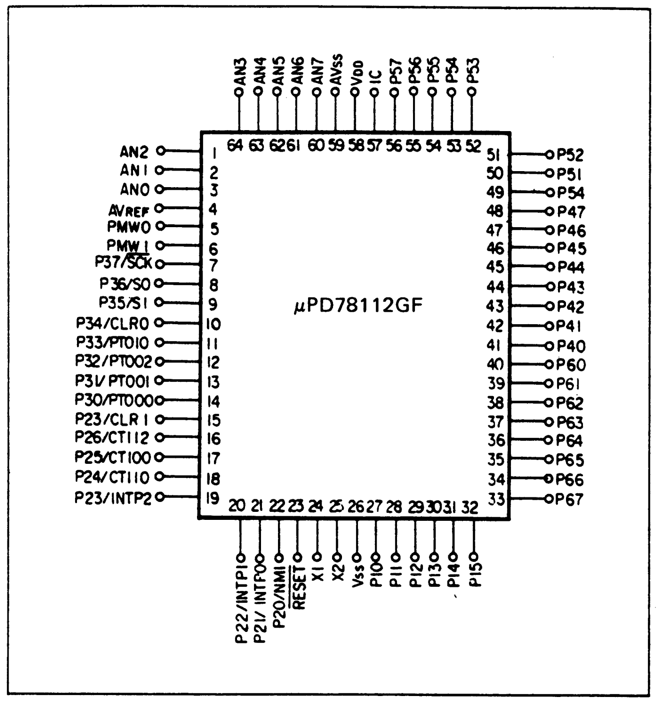

AN3
AN4
AN5
AN6
AN7
AVss
VDD
IC
P57
P56
P55
P54
P53
AN2
AN1
AN0
AVREF
PMW0
PMW1
P37/SCK
P36/SO
P35/SI
P34/CLR0
P33/PTO10
P32/PTO02
P31/PTO01
P30/PTO00
P23/CLR1
P26/CTI12
P25/CTI00
P24/CTI10
P23/INTP2
µPD78112GF
P52
P51
P54
P47
P46
P45
P44
P43
P42
P41
P40
P60
P61
P62
P63
P64
P65
P66
P67
P22/INTP1
P21/INTP0
P20/NMI
RESET
X1
X2
Vss
P10
P11
P12
P13
P14
P15
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51
52 53 54 55 56 57 58 59 60 61 62 63 64

Fig. 1. µPD78112 pin assignment diagram

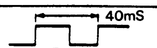
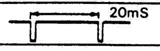
PIN NO	Signal name	I/O	Signal status	Function
1	DEW	I	Analog input	DEW detecting pin. When DEW (condensation) occurs, more than 430mV generates.
2	ATF ERR	I	Analog input	ATF ERROR input pin.
3	SWP DLY	I	Analog input	RF SWP adjustment input pin.
4	VA REF	O		A/D converter reference voltage input pin.
5	D PWM	O	PWM output	Drum motor drive signal
6	C PWM	O	PWM output	Capstan motor drive signal
7	CLK	I		Serial communication clock input.
8	DATA TO MSTR	O		Data output pin for the data to be sent to mode control CPU.
9	DATA TO SLVE	I		Data input pin for the data coming from the mode control CPU.
10	D PG	I		Drum PG input pin.
11	SP/$\overline{\text{LP}}$	O	Logic status	Playback mode output pin. SP="H", LP="L"
12	$\overline{\text{JOG}}$	O	Logic status	Video circuit normal/variable speed playback select signal. "H" during STILL, SLOW, FRAM, CUE/REV, FRSEARCH, REC REV, EDIT CUE, EDIT REV.
13	JOG VD	O	Logic status	False VD output inserted into video signal during variable speed playback mode.
14	RF SWP	O		RF SWP output pin.
15	REF V	I		REF V input pin.
16	$\overline{\text{FULL AUTO}}$	I	Logic status	"L" during AUTO LOCK
17	D FG	I		Drum FG input.
18	C FG	I		Capstan FG input.
19	$\overline{\text{END SENS}}$	I	Logic status	END-side END sensor input.

Table 1 (1)

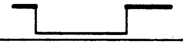
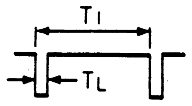
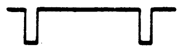
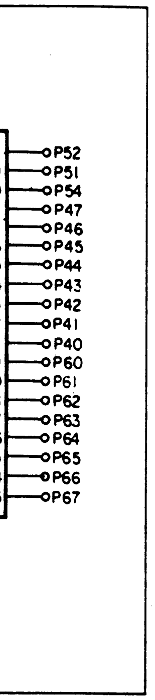
<table>
<tr><th>PIN NO</th><th>Signal name</th><th>I/O</th><th>Signal status</th><th>Functions</th></tr>
<tr><td>20</td><td>CLOG</td><td>I</td><td>Logic status</td><td>Head clogging detect input.</td></tr>
<tr><td>21</td><td>$\overline{\text{TOP SENS}}$</td><td>I</td><td>Logic status</td><td>TOP-side TOP sensor input.</td></tr>
<tr><td>22</td><td>$\overline{\text{CS}}$</td><td>I</td><td>Logic status</td><td>Input signal to start data communication. Starting at fall-down edge.</td></tr>
<tr><td>23</td><td>$\overline{\text{SLVE RESET}}$</td><td>I</td><td>Logic status</td><td>RESET input. "L" RESET.</td></tr>
<tr><td>24</td><td>X'TAL IN</td><td>I</td><td rowspan="2"> </td><td>To be used for system clock. X'tal should be connected.</td></tr>
<tr><td>25</td><td>X'TAL OUT</td><td>O</td><td>To be used for system clock. X'tal should be connected.</td></tr>
<tr><td>26</td><td>V_{ss}</td><td></td><td></td><td>GND pin</td></tr>
<tr><td>27</td><td>VA PB MODE</td><td>O</td><td>Logic status</td><td>Video, audio REC/PB select signal. "H" during PB.</td></tr>
<tr><td>28</td><td>V MUTE</td><td>O</td><td>Logic status</td><td>Video, muting signal. "H" during muting.</td></tr>
<tr><td>29</td><td>A MUTE</td><td>O</td><td>Logic status</td><td>Audio, muting signal. "H" during muting.</td></tr>
<tr><td>30</td><td>VIDEO CS</td><td>I</td><td></td><td>Input signal to start video data communication.</td></tr>
<tr><td>31</td><td>$\overline{\text{T/E LED}}$</td><td>O</td><td> </td><td>Tape top/end detecting LED ON/OFF.
Reel rotation detecting LED ON/OFF.
<table>
<tr><th>mode</th><th>REC/PB</th><th>CUE/REV</th><th>FF/REW</th></tr>
<tr><td>T_I</td><td>100</td><td>14</td><td>2</td></tr>
<tr><td>T_L</td><td>1</td><td>1</td><td>1</td></tr>
</table>
(unit in msec)</td></tr>
<tr><td>32</td><td>CG WIND</td><td>O</td><td>"H"=MIX REC
"L"=NOT</td><td>Selection signal whether character generator output will be recorded or will not be recorded.</td></tr>
<tr><td>33</td><td>CAP ON</td><td>O</td><td>Logic status</td><td>Capstan motor ON/OFF signal. "H" level means capstan motor ON.</td></tr>
<tr><td>34</td><td>$\overline{\text{ATF LOCK}}$</td><td>I</td><td>Logic status</td><td>"L" when PB mode ATF phase servo is normally phase-locked.</td></tr>
<tr><td>35</td><td>VTR Power</td><td>O</td><td>Logic status</td><td rowspan="2">DC-DC converter ON/OFF signal.
<table>
<tr><th>mode</th><th>VTR Power</th><th>CAM Power</th></tr>
<tr><td>VTR</td><td>"H"</td><td>"L"</td></tr>
<tr><td>OFF</td><td>"L"</td><td>"L"</td></tr>
<tr><td>CAM</td><td>"H"</td><td>"H"</td></tr>
</table></td></tr>
<tr><td>36</td><td>CAM Power</td><td>O</td><td>Logic status</td></tr>
<tr><td>37</td><td>VIDEO CLK</td><td>I</td><td> </td><td>Clock for video serial data communication.</td></tr>
<tr><td>38</td><td>TS B</td><td>O</td><td></td><td>ATF LOCK sampling hold signal. "L" during sampling mode. "H" during hold mode.</td></tr>
<tr><td>39</td><td>CAP BRK</td><td>O</td><td>Logic status</td><td>This is the signal that applies full voltage to capstan motor.</td></tr>
<tr><td>40</td><td>CAP FWD/$\overline{\text{RVS}}$</td><td>O</td><td>Logic status</td><td>Capstan motor rotating direction select signal. "H" during normal direction (FWD) rotation.</td></tr>
<tr><td>41</td><td>LOAD</td><td>O</td><td>Logic status</td><td rowspan="2">Threading motor control signal.
<table>
<tr><th>Operation
Signal name</th><th>LOAD</th><th>UNLOAD</th><th>BRAKE</th></tr>
<tr><td>LOAD</td><td>H</td><td>L</td><td>H</td></tr>
<tr><td>UNLOAD</td><td>L</td><td>H</td><td>H</td></tr>
</table></td></tr>
<tr><td>42</td><td>UNLOAD</td><td>O</td><td>Logic status</td></tr>
<tr><td>43</td><td>RP PB MODE</td><td>O</td><td>Logic status</td><td>REC/PB amplifier REC/PB select signal. "H" during PB.</td></tr>
<tr><td>44</td><td>$\overline{\text{FE ON}}$</td><td>O</td><td>Logic status</td><td>Flying erase oscillation ON/OFF signal, "L" during oscillation.</td></tr>
</table>

Table 1 (2)

PIN NO	
45	SEL
46	SEL
47	SEL
48	HCH
49	$\overline{\text{REC}}$
50	MSV
51	MSV
52	MSV
53	VID
54	$\overline{\text{EDIT}}$
55	DRU
56	SLO
57	VPP
58	V_{DD}
59	AV_S
60	STIL
61	JAP
62	BAT
63	T R
64	S R



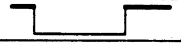
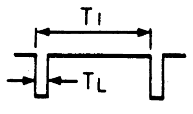
gnment

ccurs,

t pin.

LP="L"

ode.

<table>
<tr><th>PIN NO</th><th>Signal name</th><th>I／O</th><th>Signal status</th><th>Functions</th></tr>
<tr><td>20</td><td>CLOG</td><td>I</td><td>Logic status</td><td>Head clogging detect input.</td></tr>
<tr><td>21</td><td>$\overline{\text{TOP SENS}}$</td><td>I</td><td>Logic status</td><td>TOP-side TOP sensor input.</td></tr>
<tr><td>22</td><td>$\overline{\text{CS}}$</td><td>I</td><td>Logic status</td><td>Input signal to start data communication. Starting at fall-down edge.</td></tr>
<tr><td>23</td><td>$\overline{\text{SLVE RESET}}$</td><td>I</td><td>Logic status</td><td>RESET input. "L" RESET.</td></tr>
<tr><td>24</td><td>X'TAL IN</td><td>I</td><td rowspan="2">12 MHz
 </td><td>To be used for system clock. X'tal should be connected.</td></tr>
<tr><td>25</td><td>X'TAL OUT</td><td>O</td><td>To be used for system clock. X'tal should be connected.</td></tr>
<tr><td>26</td><td>V_{SS}</td><td></td><td></td><td>GND pin</td></tr>
<tr><td>27</td><td>VA PB MODE</td><td>O</td><td>Logic status</td><td>Video, audio REC/PB select signal. "H" during PB.</td></tr>
<tr><td>28</td><td>V MUTE</td><td>O</td><td>Logic status</td><td>Video, muting signal. "H" during muting.</td></tr>
<tr><td>29</td><td>A MUTE</td><td>O</td><td>Logic status</td><td>Audio, muting signal. "H" during muting.</td></tr>
<tr><td>30</td><td>VIDEO CS</td><td>I</td><td></td><td>Input signal to start video data communication.</td></tr>
<tr><td>31</td><td>$\overline{\text{T/E LED}}$</td><td>O</td><td>
 </td><td>Tape top/end detecting LED ON/OFF.
Reel rotation detecting LED ON/OFF.
<table>
<tr><th>mode</th><th>REC／PB</th><th>CUE／REV</th><th>FF／REW</th></tr>
<tr><td>T_I</td><td>100</td><td>14</td><td>2</td></tr>
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<tr><td>32</td><td>CG WIND</td><td>O</td><td>"H"=MIX REC
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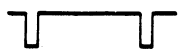
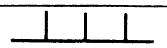
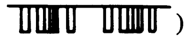
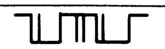
<tr><td>33</td><td>CAP ON</td><td>O</td><td>Logic status</td><td>Capstan motor ON/OFF signal. "H" level means capstan motor ON.</td></tr>
<tr><td>34</td><td>$\overline{\text{ATF LOCK}}$</td><td>I</td><td>Logic status</td><td>"L" when PB mode ATF phase servo is normally phase-locked.</td></tr>
<tr><td>35</td><td>VTR Power</td><td>O</td><td>Logic status</td><td>DC-DC converter ON/OFF signal.</td></tr>
<tr><td>36</td><td>CAM Power</td><td>O</td><td>Logic status</td><td>
<table>
<tr><th>mode</th><th>VTR Power</th><th>CAM Power</th></tr>
<tr><td>VTR</td><td>"H"</td><td>"L"</td></tr>
<tr><td>OFF</td><td>"L"</td><td>"L"</td></tr>
<tr><td>CAM</td><td>"H"</td><td>"H"</td></tr>
</table></td></tr>
<tr><td>37</td><td>VIDEO CLK</td><td>I</td><td> </td><td>Clock for video serial data communication.</td></tr>
<tr><td>38</td><td>TS B</td><td>O</td><td></td><td>ATF LOCK sampling hold signal. "L" during sampling mode. "H" during hold mode.</td></tr>
<tr><td>39</td><td>CAP BRK</td><td>O</td><td>Logic status</td><td>This is the signal that applies full voltage to capstan motor.</td></tr>
<tr><td>40</td><td>CAP FWD／$\overline{\text{RVS}}$</td><td>O</td><td>Logic status</td><td>Capstan motor rotating direction select signal. "H" during normal direction (FWD) rotation.</td></tr>
<tr><td>41</td><td>LOAD</td><td>O</td><td>Logic status</td><td>Threading motor control signal.</td></tr>
<tr><td>42</td><td>UNLOAD</td><td>O</td><td>Logic status</td><td>
<table>
<tr><th>Operation
Signal name</th><th>LOAD</th><th>UNLOAD</th><th>BRAKE</th></tr>
<tr><td>LOAD</td><td>H</td><td>L</td><td>H</td></tr>
<tr><td>UNLOAD</td><td>L</td><td>H</td><td>H</td></tr>
</table></td></tr>
<tr><td>43</td><td>RP PB MODE</td><td>O</td><td>Logic status</td><td>REC/PB amplifier REC/PB select signal. "H" during PB.</td></tr>
<tr><td>44</td><td>$\overline{\text{FE ON}}$</td><td>O</td><td>Logic status</td><td>Flying erase oscillation ON/OFF signal, "L" during oscillation.</td></tr>
</table>

Table 1 (2)

<table>
<tr><th>PIN NO</th><th>Signal name</th><th>I／O</th><th>Signal status</th><th>Functions</th></tr>
<tr><td>45</td><td>SEL1</td><td>O</td><td>Logic status</td><td>ATF REF PILOT signal frequency control.</td></tr>
<tr><td>46</td><td>SEL2</td><td>O</td><td>Logic status</td><td>
<table>
<tr><th>ATF REF PILOT</th><th>f_1</th><th>f_2</th><th>f_3</th><th>f_4</th></tr>
<tr><td>SEL1</td><td>H</td><td>L</td><td>H</td><td>L</td></tr>
<tr><td>SEL2</td><td>H</td><td>H</td><td>L</td><td>L</td></tr>
</table></td></tr>
<tr><td>47</td><td>SEL 16K／$\overline{\text{47K}}$</td><td>O</td><td>Logic status</td><td>ATF BPF select signal. "L" when detecting ATF error in f1 and f3 tracks. "H" when detecting ATF error in f2 and f4 tracks.</td></tr>
<tr><td>48</td><td>HCHG</td><td>O</td><td>Logic status</td><td>Head select signal. "H"=CH-1' "L"=CH-1.</td></tr>
<tr><td>49</td><td>$\overline{\text{REC PROOF SW}}$</td><td>I</td><td>Logic status</td><td>"H" when cassette's erroneous erasure preventing switch is set in the erasure prevention side.</td></tr>
<tr><td>50</td><td>MSW1</td><td>I</td><td>Logic status</td><td rowspan="3">Mechanism mode switch input (three bit structure, mechanical position detection)</td></tr>
<tr><td>51</td><td>MSW2</td><td>I</td><td>Logic status</td></tr>
<tr><td>52</td><td>MSW3</td><td>I</td><td>Logic status</td></tr>
<tr><td>53</td><td>VIDEO SO</td><td>O</td><td>Logic status</td><td>Data line for the data to be sent to CXA1201.</td></tr>
<tr><td>54</td><td>$\overline{\text{EDIT}}$</td><td>I</td><td></td><td>Input signal for EDIT selection. "H": OFF. "L": ON</td></tr>
<tr><td>55</td><td>DRUM BRK</td><td>O</td><td>Logic status</td><td>Slow mode drum fH compensation drum brake signal.</td></tr>
<tr><td>56</td><td>SLOW GAIN</td><td>O</td><td>Logic status</td><td>ATF ERROR's gain select signal.</td></tr>
<tr><td>57</td><td>VPP</td><td></td><td></td><td>Fixed to power supply voltage.</td></tr>
<tr><td>58</td><td>V_{DD}</td><td></td><td></td><td>Power supply pin.</td></tr>
<tr><td>59</td><td>AV_{SS}</td><td></td><td></td><td>A/D converter's GND pin.</td></tr>
<tr><td>60</td><td>STILL ADJ</td><td>I</td><td></td><td>Input signal for STILL noise position adjustment.</td></tr>
<tr><td>61</td><td>JAP／$\overline{\text{USA}}$</td><td>I</td><td>Analog input</td><td>Destination select SW input. More than 2.5V JAPAN. Less than 2.5V USA.</td></tr>
<tr><td>62</td><td>BATT LVL</td><td>I</td><td>Analog input</td><td>BATTERY LEVEL input. This is input at approx.1/2.</td></tr>
<tr><td>63</td><td>T REEL FG</td><td>I</td><td>Analog input</td><td>Take-up side REEL FG input. Used to detect reel rotation.</td></tr>
<tr><td>64</td><td>S REEL FG</td><td>I</td><td>Analog input</td><td>Supply side REEL FG input. Used to detect reel rotation.</td></tr>
</table>

Table 1 (3)

3-9. SYSTEM CONTROL – CAMERA BLOCK INTERFACE

Signal	I/O	Pin No.	Input/Output Level
$\overline{\text{AF ON}}$	O	SS-86 board IC200 ⑤	"H" when auto focus in ON.
$\overline{\text{TELE IN}}$	I	SS-86 board IC200 ③	"L" when zoom switch TELE is pressed.
$\overline{\text{WIDE IN}}$	I	SS-86 board IC200 ④	"L" when zoom switch WIDE is pressed.
$\overline{\text{TALLY}}$	O	SS-86 board IC200 ⑭	"L" when in CAMERA mode and REC mode.
CAM STB	O	FC-16 board IC190 ③	4V cycle "H" pulse. () Strobe signal for serial data transmission.
CLK	O	FC-16 board IC190 ⑦	2V cycle "L" Pulse series. () Serial data transmission clock.
DATA TO SLAVE	O	FC-16 board IC190 ⑥	2V cycle pulse series. () Serial data transmission.
TELE OUT	O	SS-86 board IC200 ⑦	"H" during the zoom motor is rotating TELE direction.
WIDE OUT	O	SS-86 board IC200 ⑧	"H" during the zoom motor is rotating WIDE direction.
BACK LIGHT	O	SS-86 board IC200 ⑥	"H" during Back Light is lit.

3-10. SYSTEM CONTROL – VIDEO, AUDIO BLOCK INTERFACE

Signal	I/O	Pin No.	VTR mode													CAMERA mode			
			STOP	FF	REW	FF SEARCH		PB	PICTUER SEARCH		PB•PAUSE	FRAME	SLOW	REC	REC. PAUSE	STAND-BY	EDIT CUE	EDIT REVIEW	REC
						CUE	REVIEW		CUE	REVIEW									
SP/$\overline{\text{LP}}$	O	SS-86 board IC001 ⑪	H	H	H	* 1	* 1	* 2	* 1	* 1	* 1	* 1	* 1	H	H	H	H	H	H
$\overline{\text{JOG}}$	O	SS-86 board IC001 ⑫	H	H	H	L	L	H	L	L	L	L	L	H	H	H	L	L	H
JOG VD	O	SS-86 board IC001 ⑬	L	L	L	* 3	* 3	L	* 3	* 3	* 3	* 3	* 3	L	L	L	* 3	* 3	L
VA SWP	O	SS-86 board IC001 ⑭	H/L	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4
REF V	O	SS-86 board IC001 ⑮	* 5	* 5	* 5	L	L	L	L	L	L	L	L	* 5	* 5	* 5	L	L	* 5
CLOG	I	SS-86 board IC001 ⑳	H	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	H			* 6	* 6	H
VA PB MODE	O	SS-86 board IC001 ㉗	L	L	L	H	H	H	H	H	H	H	H	L	L	L	H	H	L
V MUTE	O	SS-86 board IC001 ㉘	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L	L
A MUTE	O	SS-86 board IC001 ㉙	L	L	L	H	H	L	H	H	H	H	H	L	L	L	H	H	L
CG WIND	O	SS-86 board IC001 ㉜	H	H	H	H	H	H	H	H	H	H	H	H	H	* 7	* 7	* 7	* 7
CAM PWR	O	SS-86 board IC001 ㊱	L	L	L	L	L	L	L	L	L	L	L	L	L	H	H	H	H
RP PB MODE	O	SS-86 board IC001 ㊸	H	H	H	H	H	H	H	H	H	H	H	L	H	H	H	H	L
$\overline{\text{FE ON}}$	O	SS-86 board IC001 ㊹	H	H	H	H	H	H	H	H	H	H	H	L	H	H	H	H	L
TAPE2/$\overline{\text{TAPE1}}$	O	FP-53board S301	"L" when using MP type tape.																
$\overline{\text{EDIT}}$	O	PA-13 board S990	"L" when EDIT switch (PA-13 board S990) is turuned ON.																
DATA TO SLAVE	O	FC-16 board IC190 ⑥	V cycle "L" pulse series (VTR mode)													"L" pulse series (CAMERA mode)			
CLK	O	FC-16 board IC190 ⑦	V cycle "L" pulse series (VTR mode)													"L" pulse series (CAMERA mode)			
CG STB	O	FC-16 board IC190 ②	L	L	L	L	L	L	L	L	L	L	L	L	L	* 8	* 8	* 8	* 8

* 1 Outputs identification results is PB mode immediately preceding. SP mode "H" , LP mode "L" .
* 2 Outputs identification results of playback tape recording mode (SP/LP). SP mode "H" , LP mode "L" .
* 3 False VD signal (V cylce "H" pulse)
* 4 30Hz 50% duty pulse. Synchronized to drum rotation.
* 5 V cycle "L" pulse separated from line input video signal or camera video signal.
* 6 "H" at tape no signal portion or dropout portion. Input for head clogging detection.

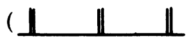
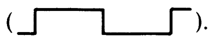
* 7 V cycle pulse
* 8 2V cycle pulse series.

3-11. SYSTEM CONTROL – SERVO PERIPHERAL CIRCUIT INTERFACE

Signal	I/O	Pin No.	VTR MODE						
			STOP	FF	REW	FR SEARCH		PB	PIC
						CUE	REVIEW		CUE
ATF ERR	I	SS-86 board IC001 ②		* 1	* 1	* 2	* 2	* 2	* 2
SWP DLY * 3	I	SS-86 board IC001 ③							
D PWM	O	SS-86 board IC001 ⑤	L	* 4	* 4	* 4	* 4	* 4	* 4
C PWM	O	SS-86 board IC001 ⑥	L	* 5	* 5	* 5	* 5	* 5	* 5
D PG	I	SS-86 board IC001 ⑩	L	* 6	* 6	* 6	* 6	* 6	* 6
RF SWP	O	SS-86 board IC001 ⑭	H/L	* 7	* 7	* 7	* 7	* 7	* 7
REF V	I	SS-86 board IC001 ⑮	* 8	* 8	* 8	L	L	L	L
D FG	I	SS-86 board IC001 ⑰	H	* 9	* 9	* 9	* 9	* 9	* 9
C FG	I	SS-86 board IC001 ⑱	H/L	* 10	* 10	* 11	* 12	* 13	* 1
CAP ON	O	SS-86 board IC001 ㉝	L	H	H	H	H	H	H
$\overline{\text{ATF LOCK}}$	I	SS-86 board IC001 ㉞		H	H	H	H	L	H
$\overline{\text{TS B}}$	O	SS-86 board IC001 ㊳	H	H	H	H	H	* 15	H
CAP BRK	O	SS-86 board IC001 ㊴	L	L	L	L	L	L	L
CAP FWD/$\overline{\text{RVS}}$	O	SS-86 board IC001 ㊵	H	H	L	H	L	H	H
SEL1	O	SS-86 board IC001 ㊺	L	L	L	* 18	* 19	* 15	* 1
SEL2	O	SS-86 board IC001 ㊻	L	L	L	* 18	* 19	* 15	* 1
SEL 16K/$\overline{\text{47K}}$	O	SS-86 board IC001 ㊼	L	L	L	* 18	* 19	* 15	* 1
SLOW GAIN	O	SS-86 board IC001 ㊽	L	L	L	L	L	L	L

3-11. SYSTEM CONTROL – SERVO PERIPHERAL CIRCUIT INTERFACE

Signal	I/O	Pin No.	VTR MODE													CAMERA MODE			
			STOP	FF	REW	FR SEARCH		PB	PICTURE SEARCH		PB•PAUSE	FRAME	SLOW	REC	REC. PAUSE	STAND-BY	EDIT CUE	EDIT REV	REC
						CUE	REVIEW		CUE	REVIEW									
ATF ERR	I	SS-86 board IC001 ②		* 1	* 1	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 2	* 1			* 2	* 2	* 1
SWP DLY * 3	I	SS-86 board IC001 ③																	
D PWM	O	SS-86 board IC001 ⑤	L	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4
C PWM	O	SS-86 board IC001 ⑥	L	* 5	* 5	* 5	* 5	* 5	* 5	* 5	L	* 5	* 5	* 5	L	L	* 5	* 5	* 5
D PG	I	SS-86 board IC001 ⑩	L	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6	* 6
RF SWP	O	SS-86 board IC001 ⑭	H/L	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7	* 7
REF V	I	SS-86 board IC001 ⑮	* 8	* 8	* 8	L	L	L	L	L	L	L	L	* 8	* 8	* 8	L	L	* 8
D FG	I	SS-86 board IC001 ⑰	H	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9	* 9
C FG	I	SS-86 board IC001 ⑱	H/L	* 10	* 10	* 11	* 12	* 13	* 11	* 12	H/L	* 14	* 14	* 13	H/L	H/L	* 13	* 13	* 13
CAP ON	O	SS-86 board IC001 ㉝	L	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
$\overline{\text{ATF LOCK}}$	I	SS-86 board IC001 ㉞		H	H	H	H	L	H	H	H	H	H	H	H	H	L	L	H
$\overline{\text{TS B}}$	O	SS-86 board IC001 ㊳	H	H	H	H	H	* 15	H	H	H	H	H	H	H	H	* 15	* 16	H
CAP BRK	O	SS-86 board IC001 ㊴	L	L	L	L	L	L	L	L	L	* 17	* 17	L	L	L	L	L	L
CAP FWD/$\overline{\text{RVS}}$	O	SS-86 board IC001 ㊵	H	H	L	H	L	H	H	L	H	H	H	H	H	H	H	L	H
SEL1	O	SS-86 board IC001 ㊺	L	L	L	* 18	* 19	* 15	* 18	* 19	H	* 20	* 20	* 21	L	L	* 15	* 16	* 21
SEL2	O	SS-86 board IC001 ㊻	L	L	L	* 18	* 19	* 15	* 18	* 19	H/L	* 20	* 20	* 21	H	H	* 15	* 16	* 21
SEL 16K/$\overline{\text{47K}}$	O	SS-86 board IC001 ㊼	L	L	L	* 18	* 19	* 15	* 18	* 19	L	* 20	* 20	L	L	L	* 15	* 16	L
SLOW GAIN	O	SS-86 board IC001 (56)	L	L	L	L	L	L	L	L	H	H	H	L	L	L	L	L	L

* 1 Fixed voltage approx. 2V DC.
* 2 ATF error voltage
* 3 DC voltage set by RV002 is input.
* 4 43μsec cycle PWM wave. Duty ratio changes according to drum error signal.
* 5 43μsec cycle PWM wave. Duty ratio changes according to capstan error signal.
* 6 V cycle "H" pulse ()
* 7 30Hz 50% duty pulse (). Synchronized to drum rotation.
* 8 V cycle "L" pulse separated from line input video signal or camera video signal.
* 9 625Hz pulse
* 10 Approx. 16500Hz pulse
* 11 Approx. 8300Hz pulse (SP mode)
* 12 Approx. 7700Hz pulse (SP mode)
* 13 Approx. 1250Hz pulse (SP mode)
* 14 Pulse input during step-by-step
* 15 Refer to Timing Chart 1
* 16 Refer to Timing Chart 2
* 17 "H" pulse output during step-by-step
* 18 Refer to Timing Chart 3
* 19 Refer to Timing Chart 4
* 20 Pulse output during step-by-step
* 21 Refer to Timing Chart 5

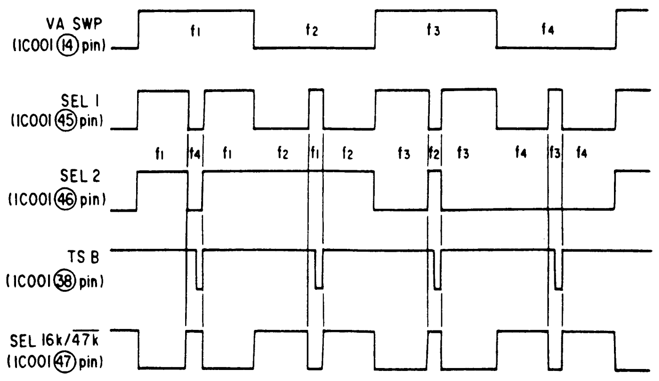
ection.

ection.

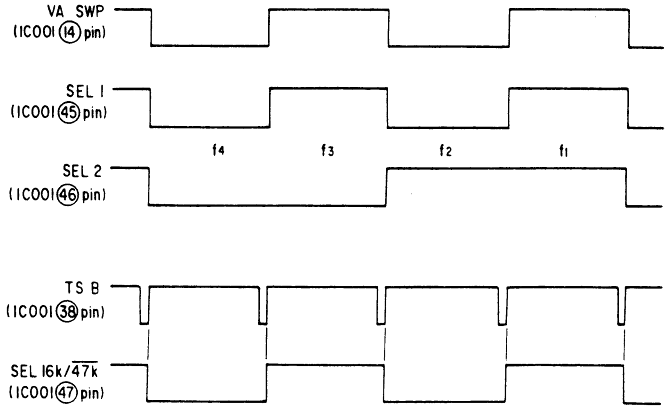
VTR mode									CAMERA mode			
SEARCH	PB	PICTUER SEARCH		PB•PAUSE	FRAME	SLOW	REC	REC. PAUSE	STAND-BY	EDIT CUE	EDIT REVIEW	REC
REVIEW		CUE	REVIEW									
* 1	* 2	* 1	* 1	* 1	* 1	* 1	H	H	H	H	H	H
L	H	L	L	L	L	L	H	H	H	L	L	H
* 3	L	* 3	* 3	* 3	* 3	* 3	L	L	L	* 3	* 3	L
* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4	* 4
L	L	L	L	L	L	L	* 5	* 5	* 5	L	L	* 5
* 6	* 6	* 6	* 6	* 6	* 6	* 6	H			* 6	* 6	H
H	H	H	H	H	H	H	L	L	L	H	H	L
L	L	L	L	L	L	L	L	L	L	L	L	L
H	L	H	H	H	H	H	L	L	L	H	H	L
H	H	H	H	H	H	H	H	H	* 7	* 7	* 7	* 7
L	L	L	L	L	L	L	L	L	H	H	H	H
H	H	H	H	H	H	H	L	H	H	H	H	L
H	H	H	H	H	H	H	L	H	H	H	H	L
990) is turuned ON.												
									"L" pulse series (CAMERA mode)			
									"L" pulse series (CAMERA mode)			
L	L	L	L	L	L	L	L	L	* 8	* 8	* 8	* 8

* 7 V cycle pulse
* 8 2V cycle pulse series.

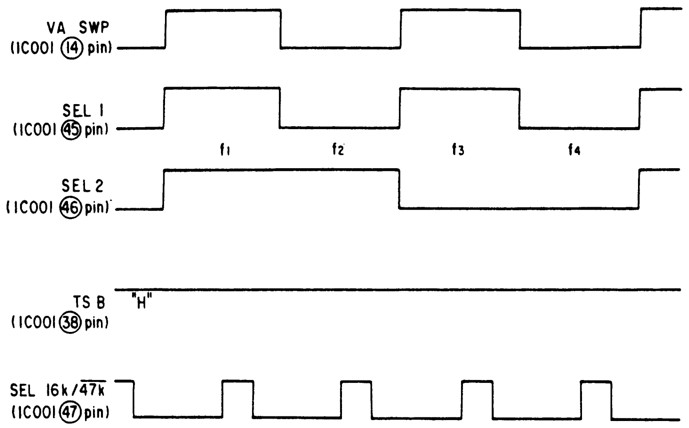
3-11-1. TIMING CHART 1 (PB, EDIT CUE)


VA SWP (IC001⑭pin)
f1
f2
f3
f4
SEL 1 (IC001㊺pin)
f1 f4 f1 f2 f1 f2 f3 f2 f3 f4 f3 f4
SEL 2 (IC001㊻pin)
TS B (IC001㊳pin)
SEL 16k/47k (IC001㊼pin)

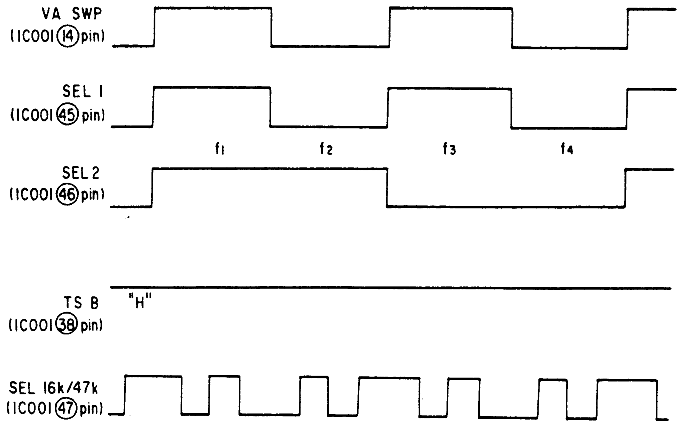
3-11-2. TIMING CHART 2 (EDIT REVIEW)


VA SWP (IC001⑭pin)
SEL 1 (IC001㊺pin)
f4
f3
f2
f1
SEL 2 (IC001㊻pin)
TS B (IC001㊳pin)
SEL 16k/47k (IC001㊼pin)

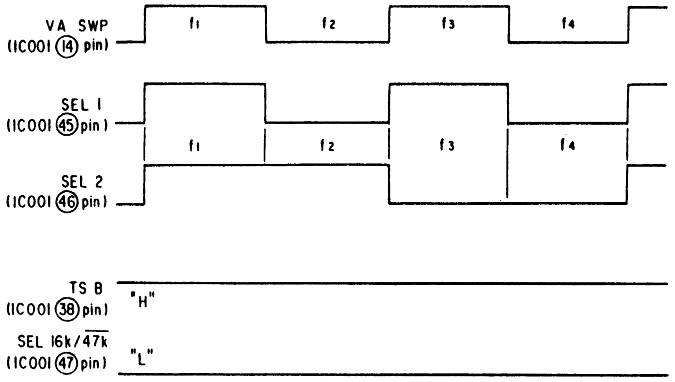
3-11-3. TIMING CHART 3 (CUE)


VA SWP (IC001⑭pin)
SEL 1 (IC001㊺pin)
f1
f2
f3
f4
SEL 2 (IC001㊻pin)
TS B (IC001㊳pin)
"H"
SEL 16k/47k (IC001㊼pin)

3-11-4. TIMING CHART 4 (REVIEW)


VA SWP (IC001⑭pin)
SEL 1 (IC001㊺pin)
f1
f2
f3
f4
SEL 2 (IC001㊻pin)
TS B (IC001㊳pin)
"H"
SEL 16k/47k (IC001㊼pin)

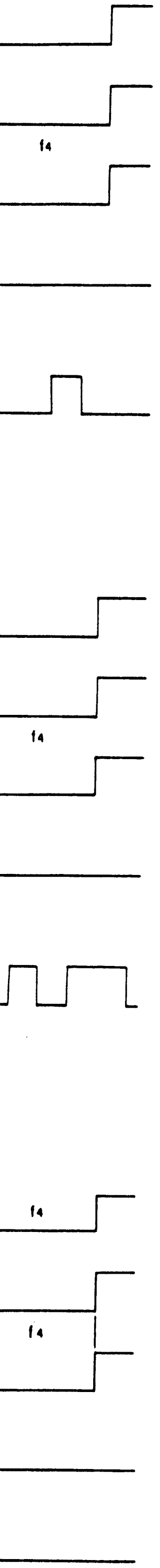
3-11-5. TIMING CHART 5 (REC)


VA SWP (IC001⑭pin)
f1
f2
f3
f4
SEL 1 (IC001㊺pin)
f1
f2
f3
f4
SEL 2 (IC001㊻pin)
TS B (IC001㊳pin)
"H"
SEL 16k/47k (IC001㊼pin)
"L"

3-12. SYSTEM CONTROL — PERIPHERAL CIRCUIT INTERFACE

Signal	I/O	Pin No.	Input/Output Level
DEW	I	SS-86 board IC001①	Dew sensor input. Input voltage increases when there is dew.
VA REF	I	SS-86 board IC001④	Reference voltage input (5V DC) for A-D conversion of pin (1) (DEW), pin (2) (ATF ERR) and pin (3) (SWP DLY) input analog voltage (0-5V DC).
CLK	I	SS-86 board IC001⑦	Clock input from serial data transmission mode control(FC-18boardIC190). V cycle "L" pulse (┃ ┃ ┃) in VTR mode.
DATA TO MASTER	O	SS-86 board IC001⑧	Serial data output to mode control. V cycle "L" pulse (┃ ┃ ┃) in VTR mode.
DATA TO SLAVE	I	SS-86 board IC001⑨	Serial data input from mode control. V cycle "L" pulse (┃ ┃ ┃) in VTR mode.
$\overline{\text{END SENS}}$	I	SS-86 board IC001⑲	TAPE END sensor (SS-86 board PH001) input. "L" pulse input at tape end. Normally "H" .
$\overline{\text{TOP SENS}}$	I	SS-86 board IC001㉑	TAPE TOP sensor (SS-86 board PH002) input. "L" pulse input at tape top. Normally "H" .
$\overline{\text{CS}}$	I	SS-86 board IC001㉒	Serial signal chip select signal input from mode control. V cycle pulse (⎍⎍).
$\overline{\text{SLAVE RESET}}$	I	SS-86 board IC001㉓	Reset signal input from mode control. Goes "L" when power is turned ON/OFF and servo/mechanism control (SS-86 board IC001) is reset.
$\overline{\text{T/E LED}}$	O	SS-86 board IC001㉛	Pulse output (┬┬┬) for lighting up T/E SENS LED (FP-53 board D302). REC/PB 100msec cycle. CUE/REVIEW 17msec cycle. FF/REW 3msec cycle. "L" when LED is lit up.
VTR POWER	O	SS-86 board IC001㉟	VTR power ON/OFF signal output. "H" during VTR mode and CAMERA mode. Operates DC-DC converter, and generates VTR 5V.
CAM POWER	O	SS-86 board IC001㊱	Camera power ON/OFF signal output. "H" during CAMERA mode. Operates DC-DC converter and generates voltages used for camera.
LOAD	O	SS-86 board IC001㊶	"H" during cassette loading.
UNLOAD	O	SS-86 board IC001㊷	"H" during cassette eject.
$\overline{\text{REC PROOF}}$	I	SS-86 board IC001㊾	"H" when cassette which can not be recorded (erase prevention) is inserted.
M SW1	I	SS-86 board IC001㊿	Mode switch input for mechanism. Indicates mechanism position.
M SW2	I	SS-86 board IC001(51)	
M SW3	I	SS-86 board IC001(52)	
V SO	O	SS-86 board IC001(53)	Video serial data output.
BATTERY LEVEL	I	SS-86 board IC001(62)	Main battery voltage level detection input.
T REEL FG	I	SS-86 board IC001(63)	T REEL FG (FP-53 board D304) input. Pulse corresponds to S reel rotation.
S REEL FG	I	SS-86 board IC001(64)	S REEL FG (FP-53 board D303) input. Pulse corresponds to S reel rotation.

Mechanism position	READY	REC/PB/ CUE/REV/FF/REW	GL	STOP	EJECT	Mid-position
M SW1	L	H	H	H	L	H
M SW2	H	H	L	L	L	H
M SW3	H	L	L	H	H	H



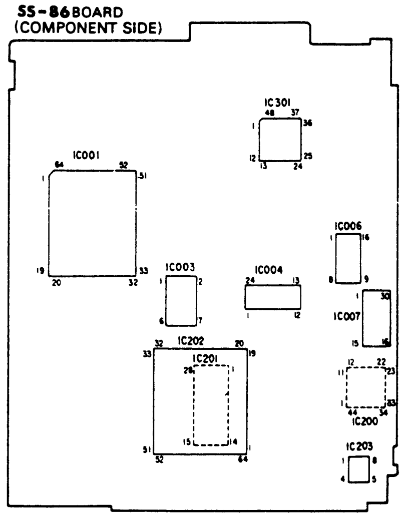
3-12. SYSTEM CONTROL – PERIPHERAL CIRCUIT INTERFACE

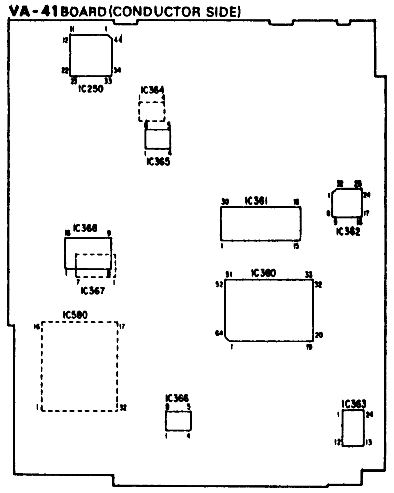
Signal	I/O	Pin No.	Input/Output Level
DEW	I	SS-86 board IC001①	Dew sensor input. Input voltage increases when there is dew.
VA REF	I	SS-86 board IC001④	Reference voltage input (5V DC) for A-D conversion of pin (1) (DEW), pin (2) (ATF ERR) and pin (3) (SWP DLY) input analog voltage (0-5V DC).
CLK	I	SS-86 board IC001⑦	Clock input from serial data transmission mode control(FC-18boardIC190). V cycle "L" pulse (‖ ‖ ‖) in VTR mode.
DATA TO MASTER	O	SS-86 board IC001⑧	Serial data output to mode control. V cycle "L" pulse (‖ ‖ ‖) in VTR mode.
DATA TO SLAVE	I	SS-86 board IC001⑨	Serial data input from mode control. V cycle "L" pulse (‖ ‖ ‖) in VTR mode.
$\overline{\text{END SENS}}$	I	SS-86 board IC001⑲	TAPE END sensor (SS-86 board PH001) input. "L" pulse input at tape end. Normally "H" .
$\overline{\text{TOP SENS}}$	I	SS-86 board IC001㉑	TAPE TOP sensor (SS-86 board PH002) input. "L" pulse input at tape top. Normally "H" .
$\overline{\text{CS}}$	I	SS-86 board IC001㉒	Serial signal chip select signal input from mode control. V cycle pulse (⎍⎍⎍).
$\overline{\text{SLAVE RESET}}$	I	SS-86 board IC001㉓	Reset signal input from mode control. Goes "L" when power is turned ON/OFF and servo/mechanism control (SS-86 board IC001) is reset.
$\overline{\text{T/E LED}}$	O	SS-86 board IC001㉛	Pulse output (╷╷╷) for lighting up T/E SENS LED (FP-53 board D302). REC/PB 100msec cycle. CUE/REVIEW 17msec cycle. FF/REW 3msec cycle. "L" when LED is lit up.
VTR POWER	O	SS-86 board IC001㉟	VTR power ON/OFF signal output. "H" during VTR mode and CAMERA mode. Operates DC-DC converter, and generates VTR 5V.
CAM POWER	O	SS-86 board IC001㊱	Camera power ON/OFF signal output. "H" during CAMERA mode. Operates DC-DC converter and generates voltages used for camera.
LOAD	O	SS-86 board IC001㊶	"H" during cassette loading.
UNLOAD	O	SS-86 board IC001㊷	"H" during cassette eject.
$\overline{\text{REC PROOF}}$	I	SS-86 board IC001㊾	"H" when cassette which can not be recorded (erase prevention) is inserted.
M SW1	I	SS-86 board IC001㊿	Mode switch input for mechanism. Indicates mechanism position.
M SW2	I	SS-86 board IC001(51)	
M SW3	I	SS-86 board IC001(52)	
V SO	O	SS-86 board IC001(53)	Video serial data output.
BATTERY LEVEL	I	SS-86 board IC001(62)	Main battery voltage level detection input.
T REEL FG	I	SS-86 board IC001(63)	T REEL FG (FP-53 board D304) input. Pulse corresponds to S reel rotation.
S REEL FG	I	SS-86 board IC001(64)	S REEL FG (FP-53 board D303) input. Pulse corresponds to S reel rotation.

Mechanism position	READY	REC/PB/ CUE/REV/FF/REW	GL	STOP	EJECT	Mid-position
M SW1	L	H	H	H	L	H
M SW2	H	H	L	L	L	H
M SW3	H	L	L	H	H	H

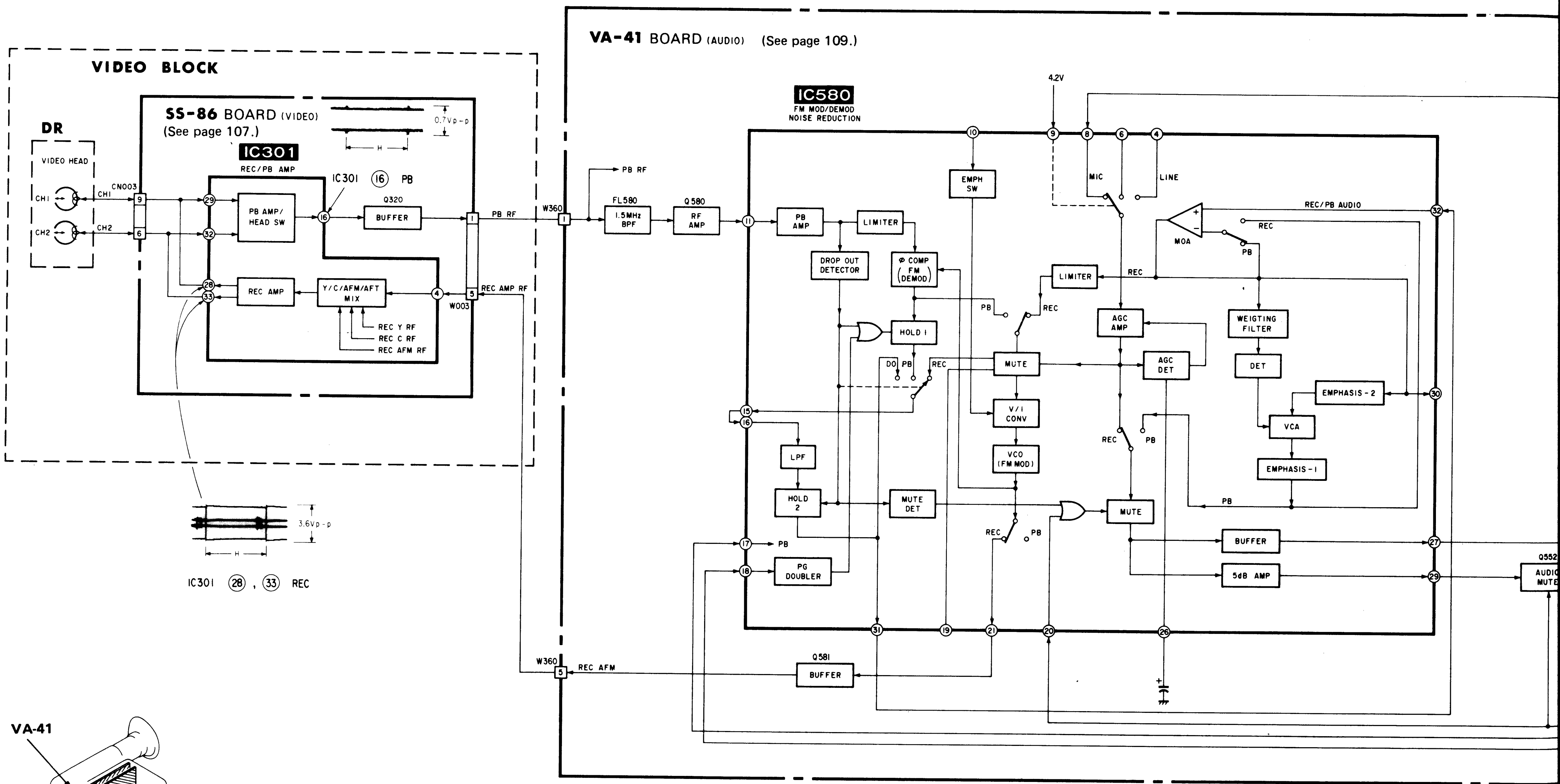
3-13. AUDIO BLOCK DIAGRAM

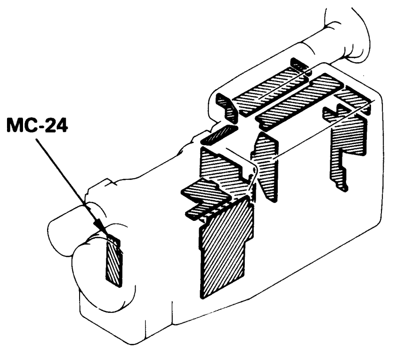
- ( ) near the board name indicates the schematic diagram page.

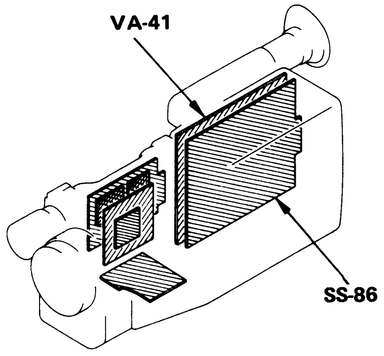

SS-86BOARD
(COMPONENT SIDE)
IC301
IC001
IC003
IC004
IC006
IC007
IC202
IC201
IC200
IC203

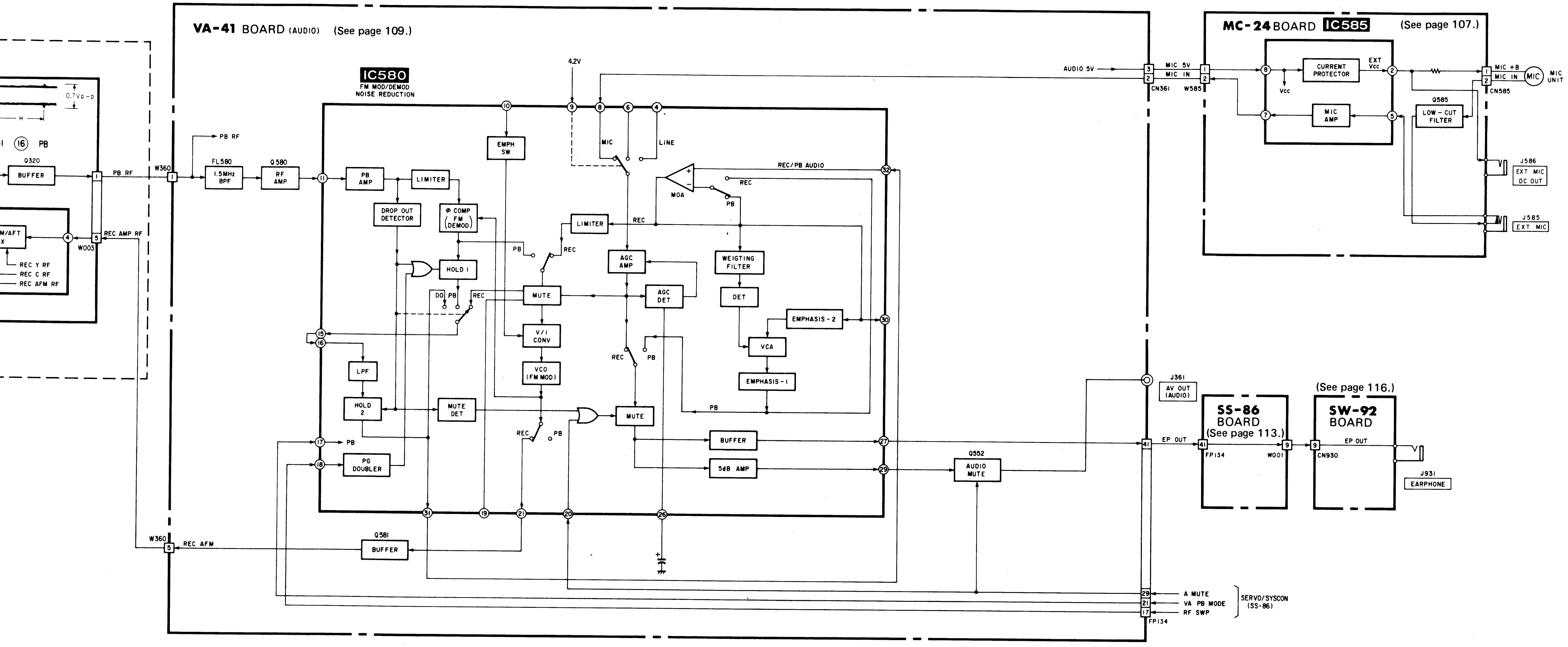

VA-41BOARD(CONDUCTOR SIDE)
IC250
IC364
IC365
IC361
IC362
IC366
IC367
IC368
IC360
IC580
IC363

- **Components on the rear side indicated by "- - -" line.**


VIDEO BLOCK
DR
VIDEO HEAD
CH1
CH2
CN003
CH1
CH2
SS-86 BOARD (VIDEO)
(See page 107.)
IC301
REC/PB AMP
0.7Vp-p
H
IC301 ⑯ PB
PB AMP/
HEAD SW
Q320
BUFFER
PB RF
REC AMP
Y/C/AFM/AFT
MIX
REC Y RF
REC C RF
REC AFM RF
REC AMP RF
W003
3.6Vp-p
H
IC301 ㉘, ㉝ REC
VA-41 BOARD (AUDIO) (See page 109.)
IC580
FM MOD/DEMOD
NOISE REDUCTION
4.2V
W360
PB RF
FL580
1.5MHz
BPF
Q580
RF
AMP
PB
AMP
LIMITER
DROP OUT
DETECTOR
φ COMP
(FM
DEMOD)
HOLD 1
DO
PB
REC
EMPH
SW
LIMITER
REC
PB
REC
MUTE
V/I
CONV
VCO
(FM MOD)
LPF
HOLD
2
MUTE
DET
PG
DOUBLER
PB
REC
PB
MIC
LINE
MOA
REC/PB AUDIO
REC
PB
REC
AGC
AMP
AGC
DET
WEIGTING
FILTER
DET
EMPHASIS - 2
VCA
EMPHASIS - 1
REC
PB
PB
MUTE
BUFFER
5dB AMP
Q552
AUDIO
MUTE
Q581
BUFFER
REC AFM
W360

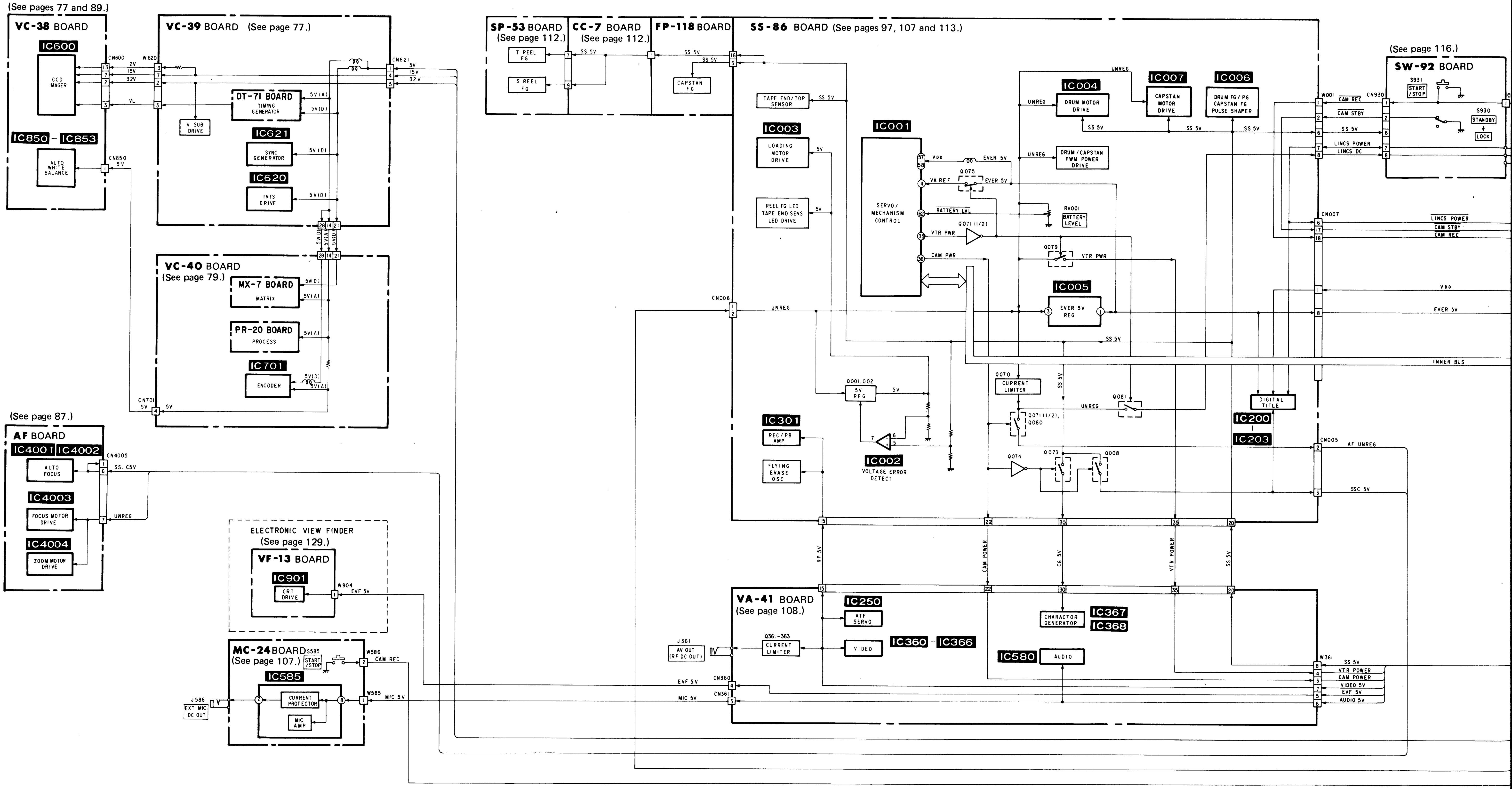


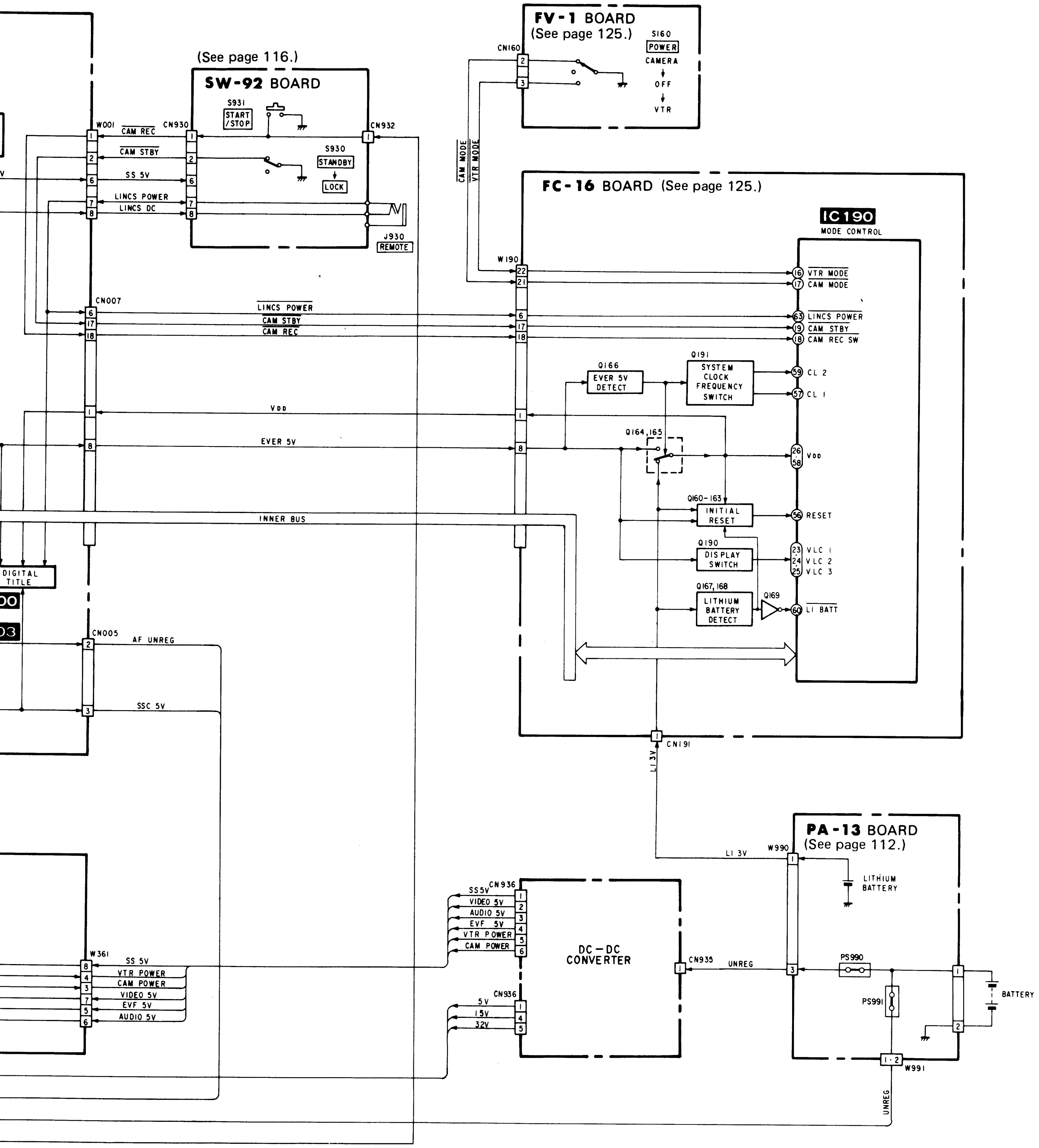



VA-41 BOARD (AUDIO) (See page 109.)
IC580
FM MOD/DEMOD
NOISE REDUCTION
0.7Vp-p
H
⑯ PB
Q320
BUFFER
PB RF
M/AFT
REC Y RF
REC C RF
REC AFM RF
REC AMP RF
W003
W360
PB RF
FL580
1.5MHz BPF
Q580
RF AMP
4.2V
PB AMP
LIMITER
DROP OUT DETECTOR
φ COMP (FM DEMOD)
EMPH SW
MIC
LINE
MOA
REC/PB AUDIO
REC
PB
LIMITER
REC
AGC AMP
WEIGTING FILTER
HOLD 1
MUTE
AGC DET
DET
EMPHASIS-2
DO
V/I CONV
VCA
VCO (FM MOD)
EMPHASIS-1
LPF
HOLD 2
MUTE DET
MUTE
BUFFER
5dB AMP
PG DOUBLER
Q552
AUDIO MUTE
Q581
BUFFER
REC AFM
AUDIO 5V
MIC 5V
MIC IN
CN361
W585
J361
AV OUT (AUDIO)
EP OUT
FP134
A MUTE
VA PB MODE
RF SWP
SERVO/SYSCON (SS-86)
MC-24 BOARD IC585 (See page 107.)
CURRENT PROTECTOR
EXT Vcc
Vcc
MIC AMP
Q585
LOW-CUT FILTER
MIC +B
MIC IN
MIC
MIC UNIT
CN585
J586
EXT MIC DC OUT
J585
EXT MIC
SS-86 BOARD (See page 113.)
W001
(See page 116.)
SW-92 BOARD
EP OUT
CN930
J931
EARPHONE

3-14. POWER SUPPLY BLOCK DIAGRAM

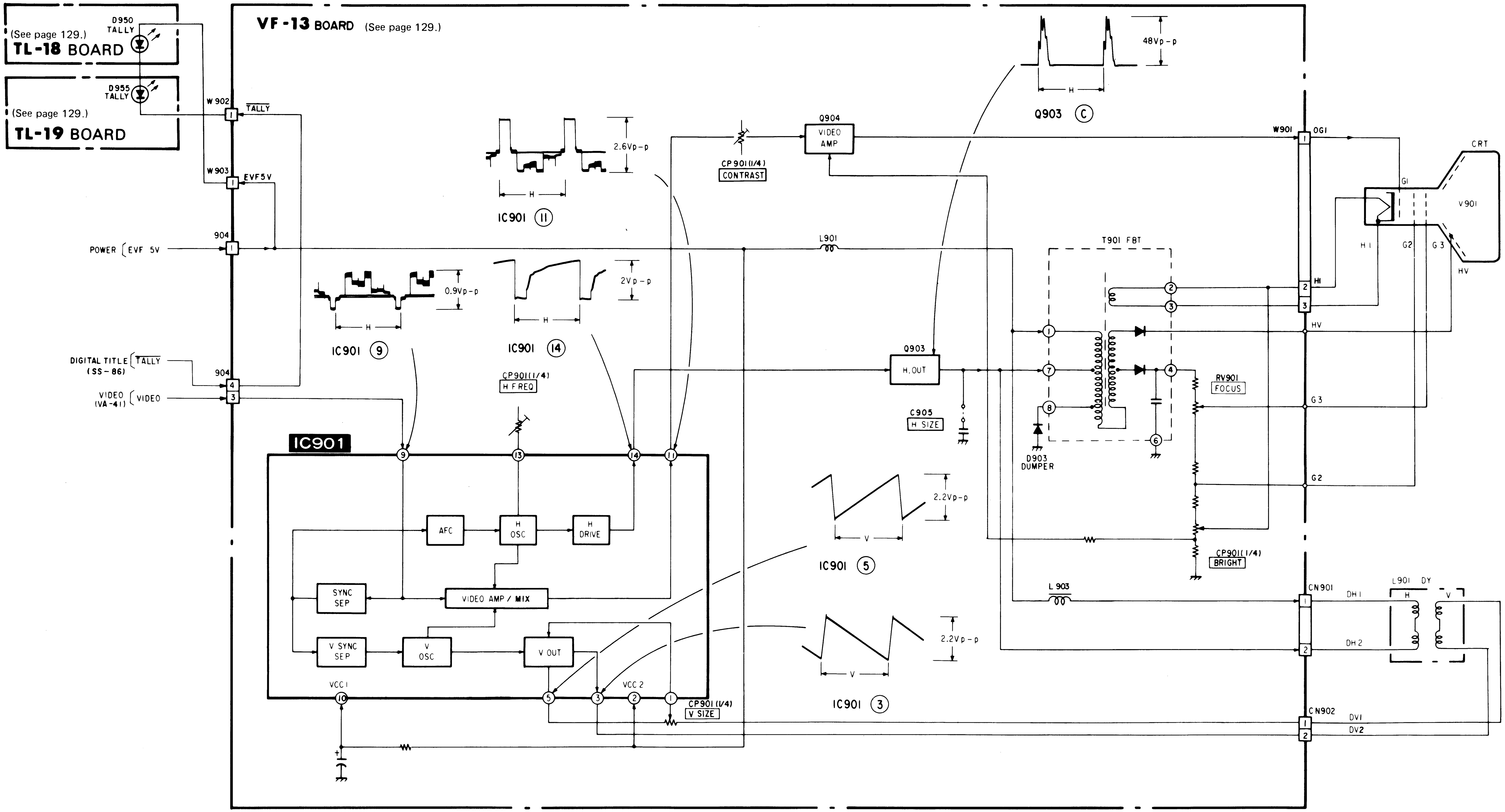
- ( ) near the board name indicates the schematic diagram page.


(See pages 77 and 89.)
VC-38 BOARD
IC600
CCD IMAGER
IC850 - IC853
AUTO WHITE BALANCE
CN600
CN850 5V
2V
15V
32V
VL
W620
VC-39 BOARD (See page 77.)
DT-71 BOARD
TIMING GENERATOR
V SUB DRIVE
IC621
SYNC GENERATOR
IC620
IRIS DRIVE
5V(A)
5V(D)
CN621
5V
15V
32V
VC-40 BOARD
(See page 79.)
MX-7 BOARD
MATRIX
PR-20 BOARD
PROCESS
IC701
ENCODER
CN701 5V
(See page 87.)
AF BOARD
IC4001
IC4002
AUTO FOCUS
IC4003
FOCUS MOTOR DRIVE
IC4004
ZOOM MOTOR DRIVE
CN4005
SS. C5V
UNREG
ELECTRONIC VIEW FINDER
(See page 129.)
VF-13 BOARD
IC901
CRT DRIVE
W904
EVF 5V
MC-24 BOARD
(See page 107.)
S585
START/STOP
IC585
CURRENT PROTECTOR
MIC AMP
W586
CAM REC
W585
MIC 5V
J586
EXT MIC DC OUT
SP-53 BOARD
(See page 112.)
T REEL FG
S REEL FG
CC-7 BOARD
(See page 112.)
SS 5V
FP-118 BOARD
CAPSTAN FG
SS-86 BOARD (See pages 97, 107 and 113.)
TAPE END/TOP SENSOR
IC003
LOADING MOTOR DRIVE
REEL FG LED TAPE END SENS LED DRIVE
IC001
SERVO/MECHANISM CONTROL
VDD
EVER 5V
Q075
VA REF
BATTERY LVL
Q071 (1/2)
VTR PWR
CAM PWR
RV001
BATTERY LEVEL
Q079
IC004
DRUM MOTOR DRIVE
DRUM/CAPSTAN PWM POWER DRIVE
IC007
CAPSTAN MOTOR DRIVE
IC006
DRUM FG/PG CAPSTAN FG PULSE SHAPER
IC005
EVER 5V REG
CN006
UNREG
SS 5V
INNER BUS
Q001, Q002
5V REG
IC002
VOLTAGE ERROR DETECT
IC301
REC/PB AMP
FLYING ERASE OSC
Q070
CURRENT LIMITER
Q071 (1/2), Q080
Q081
Q074
Q073
Q008
DIGITAL TITLE
IC200
IC203
W001
CN007
CN005
AF UNREG
SSC 5V
LINCS POWER
LINCS DC
CAM STBY
CAM REC
VDD
RP 5V
CAM POWER
CG 5V
VTR POWER
(See page 116.)
SW-92 BOARD
S931
START/STOP
S930
STANDBY
LOCK
CN930
VA-41 BOARD
(See page 108.)
IC250
ATF SERVO
Q361-363
CURRENT LIMITER
VIDEO
IC360 - IC366
CHARACTOR GENERATOR
IC367
IC368
IC580
AUDIO
J361
AV OUT (RF DC OUT)
EVF 5V
MIC 5V
CN360
CN361
W361
VIDEO 5V
AUDIO 5V


(See page 116.)
SW-92 BOARD
S931
START /STOP
S930
STANDBY
LOCK
CN930
CN932
J930
REMOTE
W001
CAM REC
CAM STBY
SS 5V
LINCS POWER
LINCS DC
CN007
LINCS POWER
CAM STBY
CAM REC
VDD
EVER 5V
INNER BUS
DIGITAL TITLE
CN005
AF UNREG
SSC 5V
W361
SS 5V
VTR POWER
CAM POWER
VIDEO 5V
EVF 5V
AUDIO 5V
FV-1 BOARD
(See page 125.)
CN160
S160
POWER
CAMERA
OFF
VTR
CAM MODE
VTR MODE
FC-16 BOARD (See page 125.)
IC190
MODE CONTROL
W190
VTR MODE
CAM MODE
LINCS POWER
CAM STBY
CAM REC SW
Q191
SYSTEM CLOCK FREQUENCY SWITCH
Q166
EVER 5V DETECT
CL 2
CL 1
Q164,165
VDD
Q160-163
INITIAL RESET
RESET
Q190
DISPLAY SWITCH
VLC 1
VLC 2
VLC 3
Q167, 168
LITHIUM BATTERY DETECT
Q169
LI BATT
CN191
LI 3V
PA-13 BOARD
(See page 112.)
W990
LI 3V
LITHIUM BATTERY
PS990
PS991
BATTERY
W991
UNREG
DC-DC CONVERTER
CN936
SS5V
VIDEO 5V
AUDIO 5V
EVF 5V
VTR POWER
CAM POWER
CN936
5V
15V
32V
CN935
UNREG

3-15. VIEWFINDER BLOCK DIAGRAM

- ( ) near the board name indicates the schematic diagram page.


(See page 129.)
TL-18 BOARD
D950
TALLY
(See page 129.)
TL-19 BOARD
D955
TALLY
VF-13 BOARD (See page 129.)
W902
TALLY
W903
EVF5V
904
POWER
EVF 5V
DIGITAL TITLE
(SS-86)
TALLY
VIDEO
(VA-41)
VIDEO
IC901 ⑪
2.6Vp-p
H
IC901 ⑨
0.9Vp-p
IC901 ⑭
2Vp-p
CP901(1/4)
H FREQ
CP901(1/4)
CONTRAST
Q904
VIDEO AMP
Q903 Ⓒ
48Vp-p
Q903
H.OUT
C905
H SIZE
L901
T901 FBT
D903
DUMPER
RV901
FOCUS
CP901(1/4)
BRIGHT
IC901
AFC
H OSC
H DRIVE
SYNC SEP
VIDEO AMP/MIX
V SYNC SEP
V OSC
V OUT
VCC1
VCC2
CP901(1/4)
V SIZE
IC901 ⑤
2.2Vp-p
V
IC901 ③
2.2Vp-p
V
L903
W901
OG1
HI
HV
G3
G2
CRT
V901
G1
H1
G2
G3
HV
CN901
DH1
DH2
L901 DY
H
V
CN902
DV1
DV2

PR

- VIDEO/AUDI

IC301 (SS-86)
CXA1202Q-Z/
CXA1202R

MIX

R

GN

PC

ME

GN

ATF

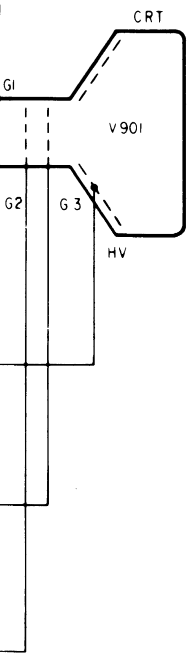
RP F

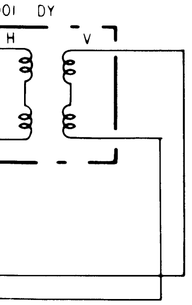
A

RP F

F

IC250 (VA-41)
CXA1204Q


CRT
GI
V901
G2
G3
HV

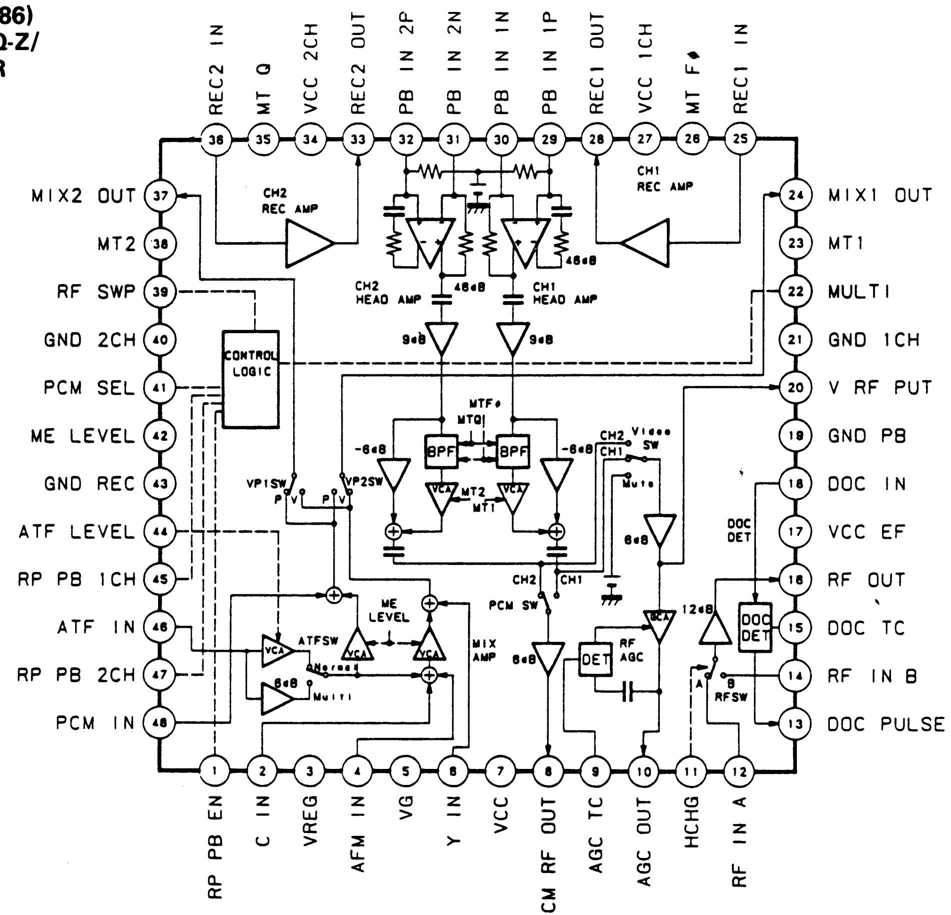


SECTION 4

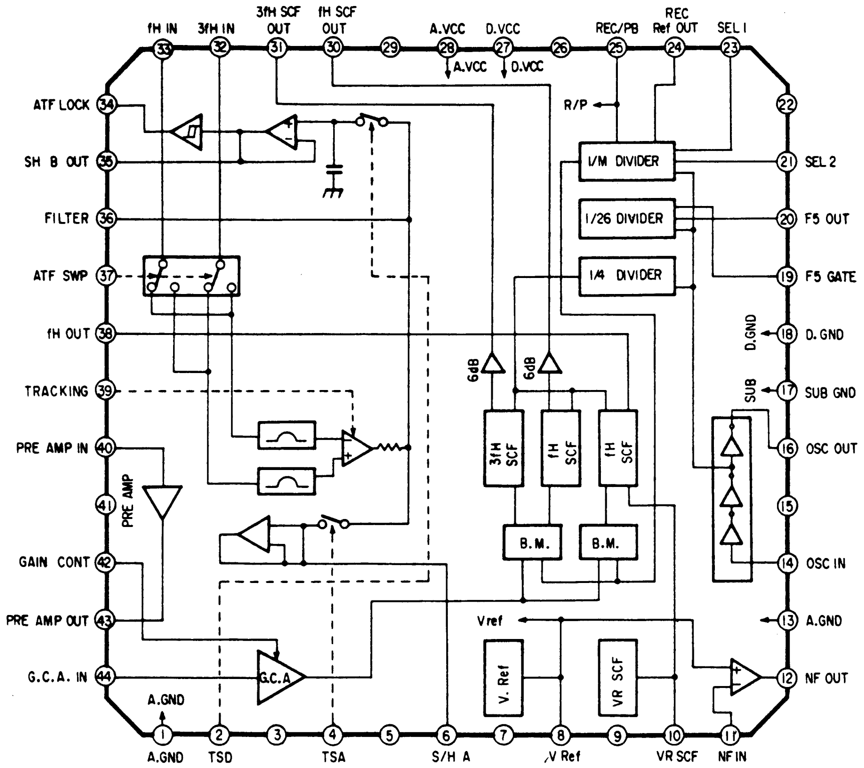
PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

- **VIDEO/AUDIO BLOCK IC BLOCK DIAGRAMS**

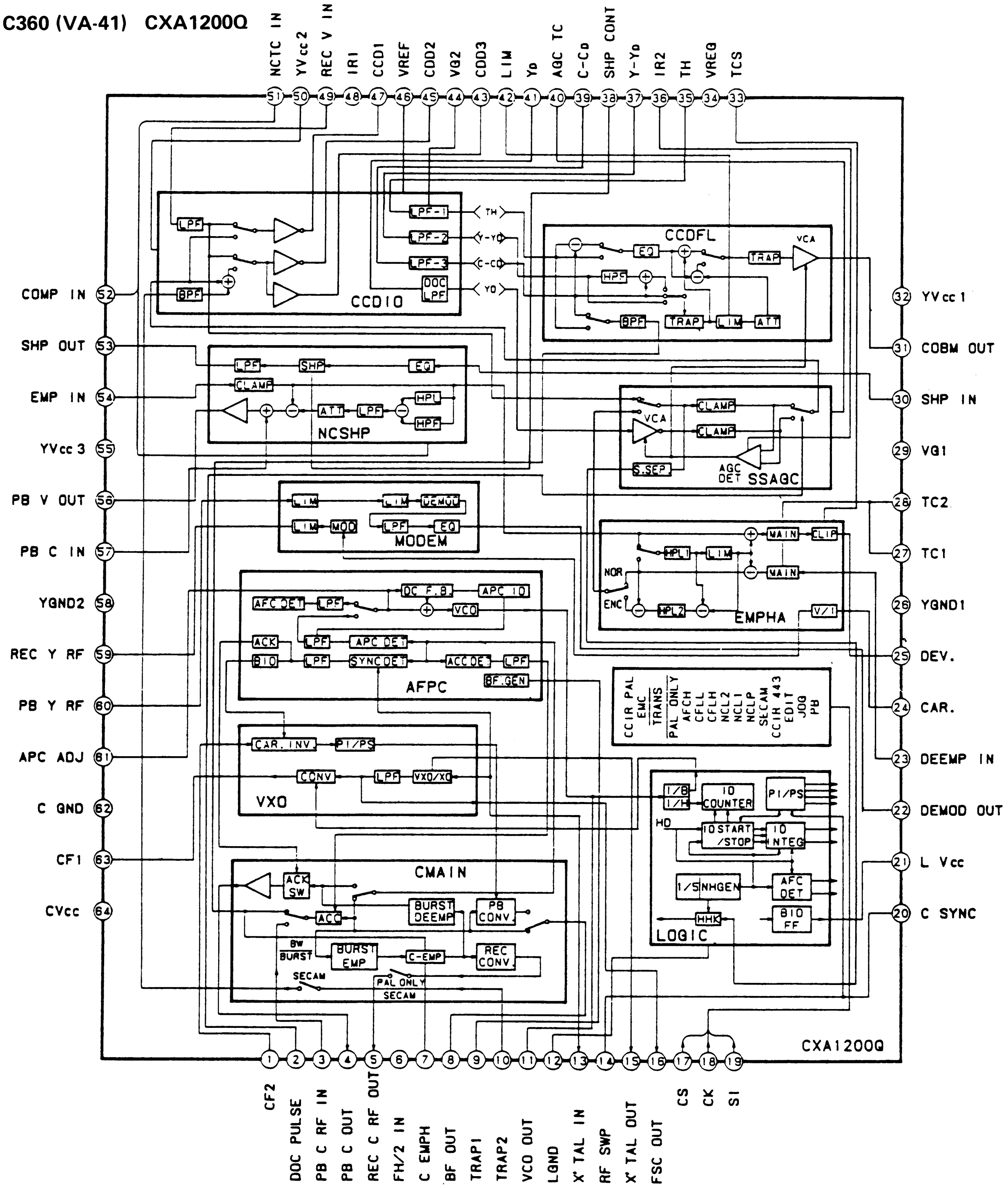
IC301 (SS-86)
CXA1202Q-Z/
CXA1202R


REC2 IN
MT Q
VCC 2CH
REC2 OUT
PB IN 2P
PB IN 2N
PB IN 1N
PB IN 1P
REC1 OUT
VCC 1CH
MT F♦
REC1 IN
36
35
34
33
32
31
30
29
28
27
26
25
MIX2 OUT
MT2
RF SWP
GND 2CH
PCM SEL
ME LEVEL
GND REC
ATF LEVEL
RP PB 1CH
ATF IN
RP PB 2CH
PCM IN
37
38
39
40
41
42
43
44
45
46
47
48
MIX1 OUT
MT1
MULTI
GND 1CH
V RF PUT
GND PB
DOC IN
VCC EF
RF OUT
DOC TC
RF IN B
DOC PULSE
24
23
22
21
20
19
18
17
16
15
14
13
CH2 REC AMP
CH1 REC AMP
CH2 HEAD AMP
CH1 HEAD AMP
46dB
9dB
CONTROL LOGIC
MTF♦
MTQ
BPF
-6dB
VCA
MT2
MT1
CH2
CH1
Video SW
Mute
VP1SW
VP2SW
P
V
6dB
ME LEVEL
MIX AMP
ATFSW
Normal
Multi
PCM SW
DET
RF AGC
GCA
12dB
DOC DET
A
B
RFSW
1
2
3
4
5
6
7
8
9
10
11
12
RP PB EN
C IN
VREG
AFM IN
VG
Y IN
VCC
PCM RF OUT
AGC TC
AGC OUT
HCHG
RF IN A

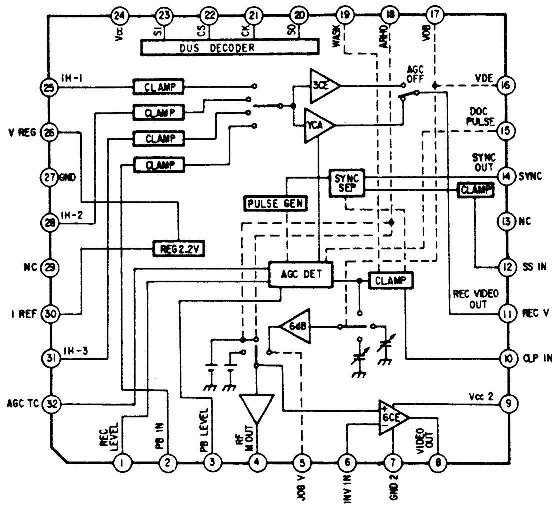
IC250 (VA-41)
CXA1204Q


fH IN
3fH IN
3fH SCF OUT
fH SCF OUT
A.VCC
D.VCC
REC/PB
REC Ref OUT
SEL 1
33
32
31
30
29
28
27
26
25
24
23
ATF LOCK
SH B OUT
FILTER
ATF SWP
fH OUT
TRACKING
PRE AMP IN
GAIN CONT
PRE AMP OUT
G.C.A. IN
34
35
36
37
38
39
40
41
42
43
44
PRE AMP
G.C.A
A.GND
R/P
1/M DIVIDER
1/26 DIVIDER
1/4 DIVIDER
6dB
3fH SCF
fH SCF
B.M.
Vref
V. Ref
VR SCF
D.GND
SUB
22
21
20
19
18
17
16
15
14
13
12
SEL 2
F5 OUT
F5 GATE
D. GND
SUB GND
OSC OUT
OSC IN
A.GND
NF OUT
1
2
3
4
5
6
7
8
9
10
11
A.GND
TSD
TSA
S/H A
V Ref
VR SCF
NF IN

IC360 (VA-41) CXA1200Q


NCTC IN
YVcc 2
REC V IN
IR1
CCD1
VREF
CDD2
VG2
CDD3
LIM
YD
AGC TC
C-CD
SHP CONT
Y-YD
IR2
TH
VREG
TCS
51
50
49
48
47
46
45
44
43
42
41
40
39
38
37
36
35
34
33
COMP IN
SHP OUT
EMP IN
YVcc 3
PB V OUT
PB C IN
YGND2
REC Y RF
PB Y RF
APC ADJ
C GND
CF1
CVcc
52
53
54
55
56
57
58
59
60
61
62
63
64
LPF
BPF
LPF-1
LPF-2
LPF-3
DOC LPF
TH
Y-YD
C-CD
YD
CCD10
CCDFL
EQ
HPF
TRAP
VCA
LIM
ATT
SHP
CLAMP
HPL
NCSHP
S.SEP
AGC DET
SSAGC
DEMOD
MOD
MODEM
NOR
ENC
HPL1
HPL2
MAIN
CLIP
V/I
EMPHA
AFC DET
DC F.B.
APC ID
VCO
ACK
BID
APC DET
SYNC DET
ACC DET
BF.GEN
AFPC
CCIR PAL
EMC
TRANS
PAL ONLY
AFCH
CFLL
CFLH
NCL2
NCL1
NCLP
SECAM
CCIH 443
EDIT
JOG
PB
CAR. INV.
PI/PS
CCNV
VXO/XO
VXO
1/8
1/H
ID COUNTER
HD
ID START /STOP
ID INTEG
1/5NHGEN
AFC DET
HHK
BID FF
LOGIC
CMAIN
ACK SW
ACC
BURST DEEMP
PB CONV.
BW BURST
BURST EMP
C-EMP
REC CONV.
SECAM
PAL ONLY
CXA1200Q
32
31
30
29
28
27
26
25
24
23
22
21
20
YVcc 1
COBM OUT
SHP IN
VG1
TC2
TC1
YGND1
DEV.
CAR.
DEEMP IN
DEMOD OUT
L Vcc
C SYNC
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
CF2
DOC PULSE
PB C RF IN
PB C OUT
REC C RF OUT
FH/2 IN
C EMPH
BF OUT
TRAP1
TRAP2
VCO OUT
LGND
X' TAL IN
RF SWP
X' TAL OUT
FSC OUT
CS
CK
SI

IC362 (VA-41)
CXA1201Q


24
23
22
21
20
19
18
17
Vcc
SI
CS
CK
SO
WASK
ARHD
VOB
DUS DECODER
IH-1
V REG
GND
IH-2
NC
I REF
IH-3
AGC TC
25
26
27
28
29
30
31
32
CLAMP
3CE
YCA
AGC OFF
SYNC SEP
PULSE GEN
REG2.2V
AGC DET
6dB
6CE
VDE
DOC PULSE
SYNC OUT
SYNC
NC
SS IN
REC VIDEO OUT
REC V
CLP IN
Vcc 2
16
15
14
13
12
11
10
9
REC LEVEL
PB IN
PB LEVEL
RF M OUT
VIDEO OUT
1
2
3
4
5
6
7
8
JOB V
INV IN
GND 2

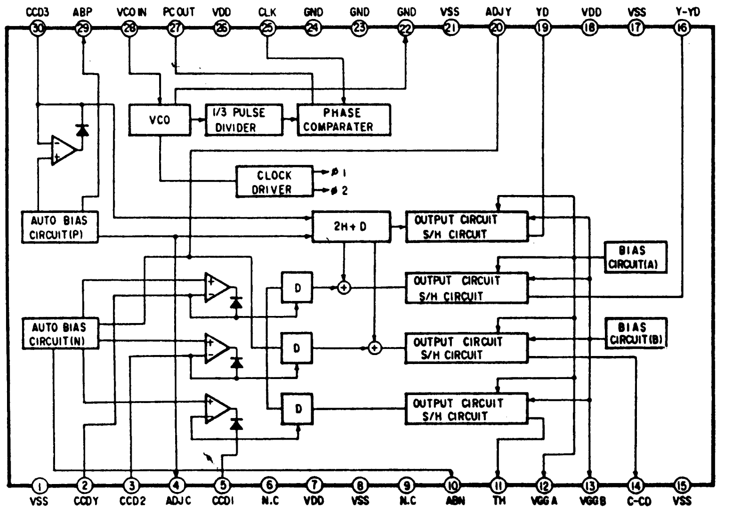
4-1. FRAME SCHEMATIC DIAGRAM

When indicating parts by reference number, please include the board name.

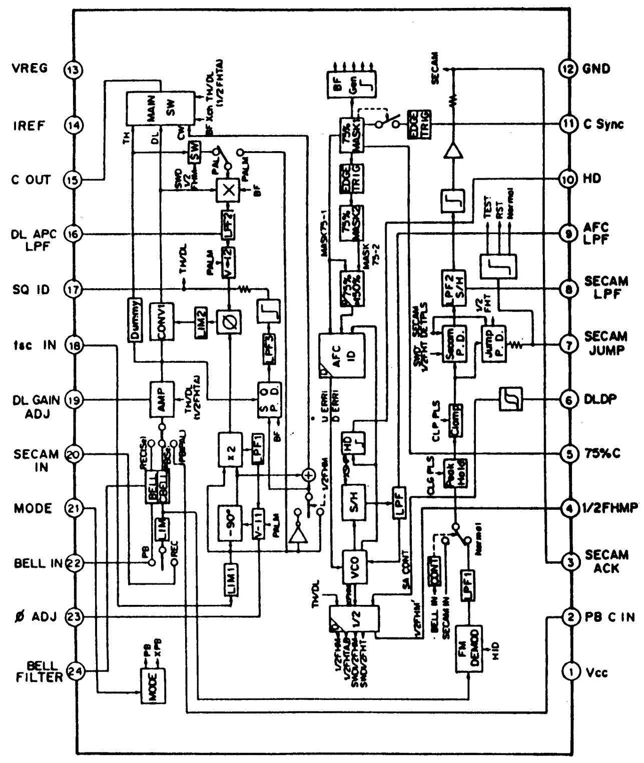
Precautions for replacement of CCD imager block.

- After the CCD imager block has been replaced, perform the entire adjustments of the camera section.
- CCD imager is structurally in case of being broken down by static electricity. For this reason, take care to handle it as well as MOS IC. Moreover, care should be taken for dust not to be stuck on the light reseiving section and for strong light not to get into there.

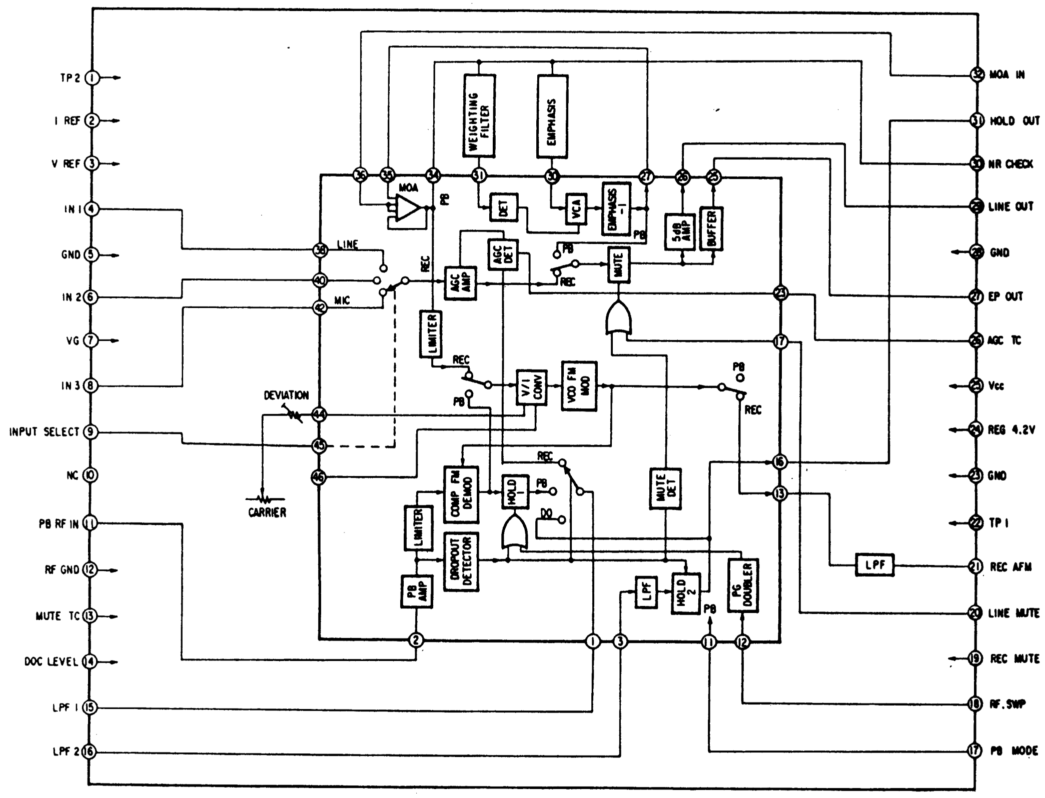
IC361 (VA-41) CXL1502

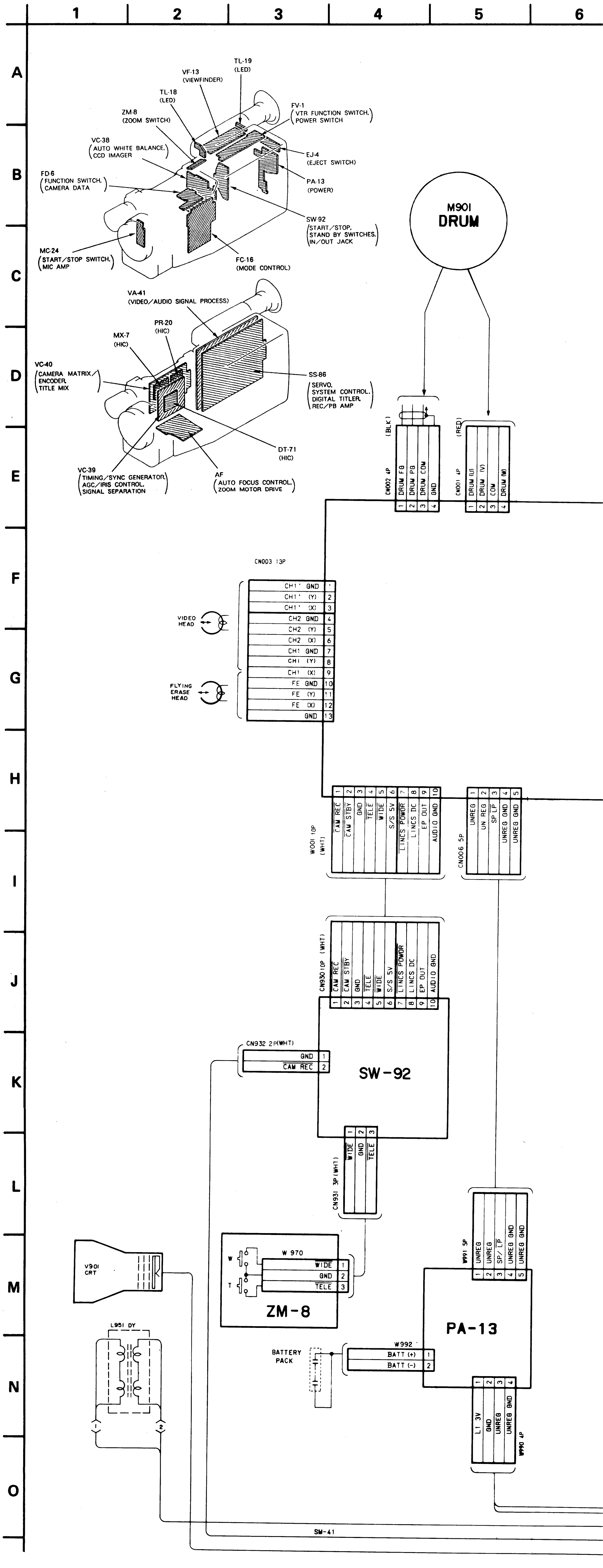

CCD3
ABP
VCO IN
PC OUT
VDD
CLK
GND
GND
GND
VSS
ADJ Y
YD
VDD
VSS
Y-YD
VCO
1/3 PULSE DIVIDER
PHASE COMPARATER
CLOCK DRIVER
φ1
φ2
AUTO BIAS CIRCUIT(P)
2H+D
OUTPUT CIRCUIT S/H CIRCUIT
BIAS CIRCUIT(A)
D
OUTPUT CIRCUIT S/H CIRCUIT
AUTO BIAS CIRCUIT(N)
D
OUTPUT CIRCUIT S/H CIRCUIT
BIAS CIRCUIT(B)
D
OUTPUT CIRCUIT S/H CIRCUIT
VSS
CCDY
CCD2
ADJC
CCD1
N.C
VDD
VSS
N.C
ABN
TH
VGG A
VGG B
C-CD
VSS

IC363 (VA-41) CXA1203M

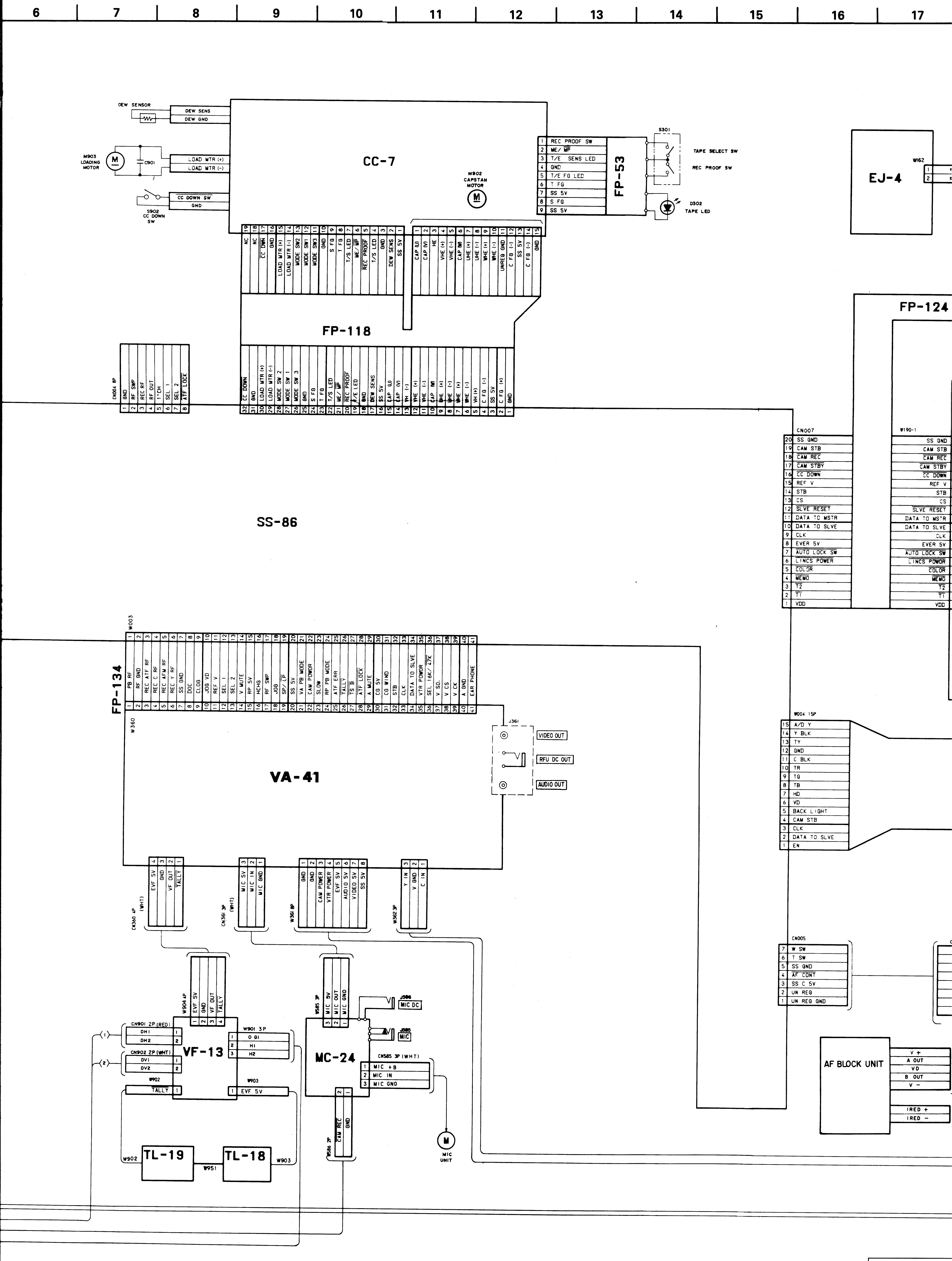

VREG ⑬
IREF ⑭
C OUT ⑮
DL APC LPF ⑯
SQ ID ⑰
fsc IN ⑱
DL GAIN ADJ ⑲
SECAM IN ⑳
MODE ㉑
BELL IN ㉒
φ ADJ ㉓
BELL FILTER ㉔
⑫ GND
⑪ C Sync
⑩ HD
⑨ AFC LPF
⑧ SECAM LPF
⑦ SECAM JUMP
⑥ DLDP
⑤ 75%C
④ 1/2FHMP
③ SECAM ACK
② PB C IN
① Vcc
MAIN SW
Dummy
CONV
LIM2
AMP
x2
-90°
V-1/2
LIM1
BELL
PB
REC
MODE
AFC ID
S/H
VCO
LPF1
LPF2
S/H
FM DEMOD
1/2
SECAM

IC580 (VA-41) SBX1505-01/21

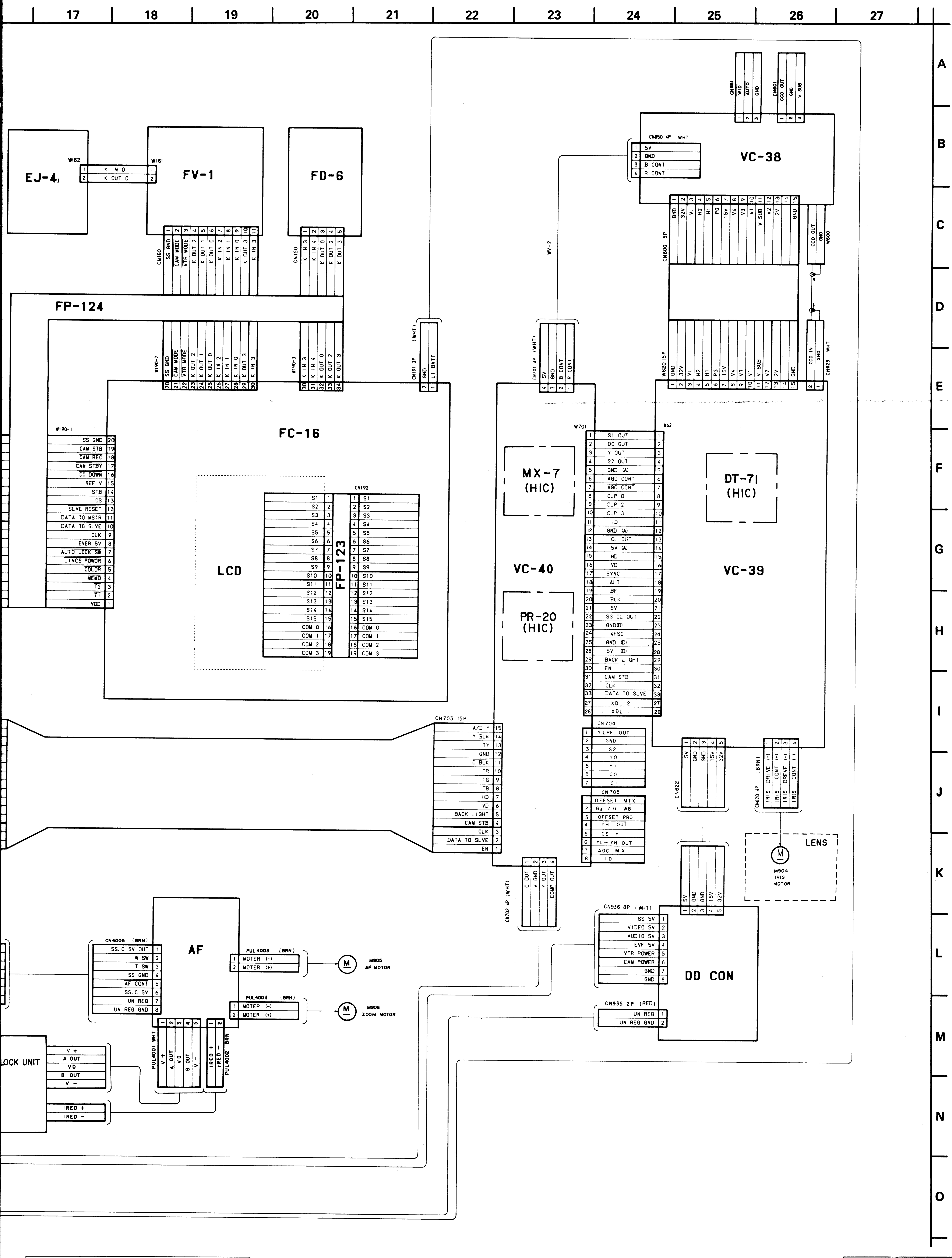

TP2 ①
I REF ②
V REF ③
IN 1 ④
GND ⑤
IN 2 ⑥
VG ⑦
IN 3 ⑧
INPUT SELECT ⑨
NC ⑩
PB RF IN ⑪
RF GND ⑫
MUTE TC ⑬
DOC LEVEL ⑭
LPF 1 ⑮
LPF 2 ⑯
㉜ MOA IN
㉛ HOLD OUT
㉚ NR CHECK
㉙ LINE OUT
㉘ GND
㉗ EP OUT
㉖ AGC TC
㉕ Vcc
㉔ REG 4.2V
㉓ GND
㉒ TP1
㉑ REC AFM
⑳ LINE MUTE
⑲ REC MUTE
⑱ RF.SWP
⑰ PB MODE
WEIGHTING FILTER
EMPHASIS
MOA
PB
DET
VCA
EMPHASIS -1
S/H AMP
BUFFER
LINE
REC
MIC
AGC AMP
AGC DET
MUTE
LIMITER
V/I CONV
VCO FM MOD
DEVIATION
CARRIER
COMP FM DEMOD
HOLD
DO
MUTE DET
LIMITER
DROPOUT DETECTOR
PB AMP
LPF
HOLD 2
FG DOUBLER
LPF


1
2
3
4
5
6
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
TL-19 (LED)
VF-13 (VIEWFINDER)
TL-18 (LED)
ZM-8 (ZOOM SWITCH)
FV-1 (VTR FUNCTION SWITCH, POWER SWITCH)
VC-38 (AUTO WHITE BALANCE, CCD IMAGER)
EJ-4 (EJECT SWITCH)
FD-6 (FUNCTION SWITCH, CAMERA DATA)
PA-13 (POWER)
SW-92 (START/STOP, STAND BY SWITCHES, IN/OUT JACK)
MC-24 (START/STOP SWITCH, MIC AMP)
FC-16 (MODE CONTROL)
VA-41 (VIDEO/AUDIO SIGNAL PROCESS)
PR-20 (HIC)
MX-7 (HIC)
VC-40 (CAMERA MATRIX/ENCODER, TITLE MIX)
SS-86 (SERVO, SYSTEM CONTROL, DIGITAL TITLER, REC/PB AMP)
DT-71 (HIC)
VC-39 (TIMING/SYNC GENERATOR, AGC/IRIS CONTROL, SIGNAL SEPARATION)
AF (AUTO FOCUS CONTROL, ZOOM MOTOR DRIVE)
M901 DRUM
(BLK)
(RED)
CN002 4P
DRUM FG
DRUM PG
DRUM COM
GND
CN001 4P
DRUM (U)
DRUM (V)
COM
DRUM (W)
CN003 13P
CH1 GND
CH1 (Y)
CH1 (X)
CH2 GND
CH2 (Y)
CH2 (X)
CH1 GND
CH1 (Y)
CH1 (X)
FE GND
FE (Y)
FE (X)
GND
VIDEO HEAD
FLYING ERASE HEAD
W001 10P (WHT)
CAM REC
CAM STBY
GND
TELE
WIDE
S/S 5V
LINCS POWER
LINCS DC
EP OUT
AUDIO GND
CN006 5P
UNREG
UN REG
SP LP
UNREG GND
UNREG GND
CN930 10P (WHT)
CAM REC
CAM STBY
GND
TELE
WIDE
S/S 5V
LINCS POWER
LINCS DC
EP OUT
AUDIO GND
CN932 2P(WHT)
GND
CAM REC
SW-92
CN931 3P(WHT)
WIDE
GND
TELE
W991 5P
UNREG
UNREG
SP/LP
UNREG GND
UNREG GND
V901 CRT
W 970
W
T
WIDE
GND
TELE
ZM-8
PA-13
L951 DY
BATTERY PACK
W992
BATT (+)
BATT (-)
L1 3V
GND
UNREG
UNREG GND
W990 4P
SM-41

VIDEO, AUDIO FRAME


6
7
8
9
10
11
12
13
14
15
16
17
CC-7
DEW SENSOR
DEW SENS
DEW GND
M903 LOADING MOTOR
C901
LOAD MTR (+)
LOAD MTR (-)
S902 CC DOWN SW
CC DOWN SW
GND
M902 CAPSTAN MOTOR
FP-53
REC PROOF SW
ME/ MP
T/E SENS LED
GND
T/E FG LED
T FG
SS 5V
S FG
SS 5V
S301
TAPE SELECT SW
REC PROOF SW
D302 TAPE LED
EJ-4
W162
FP-118
NC
NC
CC DOWN
GND
LOAD MTR (+)
LOAD MTR (-)
MODE SW2
MODE SW1
MODE SW3
S FG
T FG
T/S LED
ME/MP
REC PROOF
T/S LED
GND
DEW SENS
SS 5V
CAP (U)
CAP (V)
HE
VHE (+)
VHE (-)
CAP (W)
UHE (+)
UHE (-)
WHE (+)
WHE (-)
UNREG GND
C FG (-)
SS 5V
C FG (-)
GND
C FG (+)
VH (+)
VH (-)
CN004 8P
RF SWP
REC RF
RF OUT
1'CH
SEL 1
SEL 2
ATF LOCK
FP-124
SS-86
CN007
W190-1
SS GND
CAM STB
CAM REC
CAM STBY
CC DOWN
REF V
STB
CS
SLVE RESET
DATA TO MSTR
DATA TO SLVE
CLK
EVER 5V
AUTO LOCK SW
LINCS POWER
COLOR
MEMO
T2
T1
VDD
W003
FP-134
W360
PB RF
RF GND
REC ATF RF
REC C RF
REC AFM RF
REC Y RF
SS GND
DOC
CLOG
JOG VD
REF V
SEL 1
SEL 2
V MUTE
RP 5V
HCHG
RF SWP
JOG
SP/ LP
SS 5V
VA PB MODE
CAM POWOR
SLOW
RP PB MODE
ATF ERR
TALLY
TS B
ATF LOCK
A MUTE
CG 5V
CG WIND
STB
CLK
DATA TO SLVE
VTR POWOR
SEL 16K/ 47K
V SD.
V CS
V CK
A GND
EAR PHONE
VA-41
J361
VIDEO OUT
RFU DC OUT
AUDIO OUT
W004 15P
A/D Y
Y BLK
TY
GND
C BLK
TR
TG
TB
HD
VD
BACK LIGHT
CAM STB
CLK
DATA TO SLVE
EN
CN360 4P (WHT)
EVF 5V
GND
VF OUT
TALLY
CN361 3P (WHT)
MIC 5V
MIC IN
MIC GND
W361 8P
GND
GND
CAM POWER
VTR POWER
EVF 5V
AUDIO 5V
VIDEO 5V
SS 5V
W362 3P
Y IN
V GND
C IN
CN005
W SW
T SW
SS GND
AF CONT
SS C 5V
UN REG
UN REG GND
W904 4P
VF-13
CN901 2P (RED)
DH1
DH2
CN902 2P (WHT)
DV1
DV2
W901 3P
O G1
H1
H2
W902
TALLY
W903
EVF 5V
TL-19
TL-18
W951
W585 3P
MIC 5V
MIC OUT
MIC GND
J586
MIC DC
J585
MIC
MC-24
CN585 3P (WHT)
MIC +B
MIC IN
MIC GND
W586 2P
CAM REC
GND
M
MIC UNIT
AF BLOCK UNIT
V +
A OUT
VD
B OUT
V −
IRED +
IRED −

FRAM


17
18
19
20
21
22
23
24
25
26
27
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
EJ-4
W162
1 K IN 0
2 K OUT 0
W161
FV-1
CN160
1 SS GND
2 CAM MODE
3 VTR MODE
4 K OUT 2
5 K OUT 1
6 K OUT 0
7 K IN 2
8 K IN 1
9 K IN 0
10 K OUT 3
11 K IN 3
FD-6
CN150
1 K IN 3
2 K IN 4
3 K OUT 0
4 K OUT 2
5 K OUT 3
FP-124
W190-2
20 SS GND
21 CAM MODE
22 VTR MODE
23 K OUT 2
24 K OUT 1
25 K OUT 0
26 K IN 2
27 K IN 1
28 K IN 0
29 K OUT 3
30 K IN 3
W190-3
30 K IN 3
31 K IN 4
32 K OUT 0
33 K OUT 2
34 K OUT 3
CN191 2P (WHT)
2 GND
1 LI BATT
FC-16
W190-1
SS GND 20
CAM STB 19
CAM REC 18
CAM STBY 17
CC DOWN 16
REF V 15
STB 14
CS 13
SLVE RESET 12
DATA TO MSTR 11
DATA TO SLVE 10
CLK 9
EVER 5V 8
AUTO LOCK SW 7
LINCS POWOR 6
COLOR 5
MEMO 4
T2 3
T1 2
VDD 1
LCD
CN192
FP-123
S1 1 1 S1
S2 2 2 S2
S3 3 3 S3
S4 4 4 S4
S5 5 5 S5
S6 6 6 S6
S7 7 7 S7
S8 8 8 S8
S9 9 9 S9
S10 10 10 S10
S11 11 11 S11
S12 12 12 S12
S13 13 13 S13
S14 14 14 S14
S15 15 15 S15
COM 0 16 16 COM 0
COM 1 17 17 COM 1
COM 2 18 18 COM 2
COM 3 19 19 COM 3
WV-2
CN701 4P (WHT)
4 5V
3 GND
2 B CONT
1 R CONT
VC-40
MX-7 (HIC)
PR-20 (HIC)
W701
W621
1 S1 OUT 1
2 DC OUT 2
3 Y OUT 3
4 S2 OUT 4
5 GND (A) 5
6 AGC CONT 6
7 AGC CONT 7
8 CLP 0 8
9 CLP 2 9
10 CLP 3 10
11 ID 11
12 GND (A) 12
13 CL OUT 13
14 5V (A) 14
15 HD 15
16 VD 16
17 SYNC 17
18 LALT 18
19 BF 19
20 BLK 20
21 5V 21
22 SG CL OUT 22
23 GND(D) 23
24 4FSC 24
25 GND (D) 25
28 5V (D) 28
29 BACK LIGHT 29
30 EN 30
31 CAM STB 31
32 CLK 32
33 DATA TO SLVE 33
27 XDL 2 27
26 XDL 1 26
CN704
1 YLPF. OUT
2 GND
3 S2
4 YO
5 Y1
6 CO
7 C1
CN705
1 OFFSET MTX
2 Gr / G WB
3 OFFSET PRO
4 YH OUT
5 CS Y
6 YL- YH OUT
7 AGC MIX
8 ID
CN703 15P
A/D Y 15
Y BLK 14
TY 13
GND 12
C BLK 11
TR 10
TG 9
TB 8
HD 7
VD 6
BACK LIGHT 5
CAM STB 4
CLK 3
DATA TO SLVE 2
EN 1
CN702 4P (WHT)
1 C OUT
2 V GND
3 Y OUT
4 COMP OUT
VC-38
CN851
1 W10
2 AUTO
3 GND
CN601
1 CCD OUT
2 GND
3 V SUB
CN850 4P WHT
1 5V
2 GND
3 B CONT
4 R CONT
CN600 15P
1 GND
2 32V
3 VL
4 H2
5 H1
6 PG
7 15V
8 V4
9 V3
10 V1
11 V SUB
12 V2
13 2V
14
15 GND
CCD OUT
GND
W600
W620 15P
1 GND
2 32V
3 VL
4 H2
5 H1
6 PG
7 15V
8 V4
9 V3
10 V1
11 V SUB
12 V2
13 2V
14
15 GND
CCD IN
GND
CN623 WHT
VC-39
DT-71 (HIC)
CN622
1 5V
2 GND
3 GND
4 15V
5 32V
CN620 4P (BRN)
1 IRIS DRIVE (+)
2 IRIS CONT (+)
3 IRIS DREVE (-)
4 IRIS CONT (-)
LENS
M904 IRIS MOTOR
1 5V
2 GND
3 GND
4 15V
5 32V
CN936 8P (WHT)
SS 5V 1
VIDEO 5V 2
AUDIO 5V 3
EVF 5V 4
VTR POWER 5
CAM POWER 6
GND 7
GND 8
DD CON
CN935 2P (RED)
UN REG 1
UN REG GND 2
AF
CN4005 (BRN)
SS.C 5V OUT 1
W SW 2
T SW 3
SS GND 4
AF CONT 5
SS.C 5V 6
UN REG 7
UN REG GND 8
PUL4003 (BRN)
1 MOTER (-)
2 MOTER (+)
M905 AF MOTOR
PUL4004 (BRN)
1 MOTER (-)
2 MOTER (+)
M906 ZOOM MOTOR
PUL4001 WHT
1 V+
2 A OUT
3 VD
4 B OUT
5 V-
PUL4002 BRN
1 IRED +
2 IRED -
OCK UNIT
V+
A OUT
VD
B OUT
V-
IRED +
IRED -

FRAME FRAME

FRAME

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

VC-38 (CCD IMAGER), VC-39 (TIMING/SYNC GENERATOR), VC-40 (CAMERA MATRIX, CAMERA ENCODER, TITLE MIX) PRINTED WIRING BOARDS

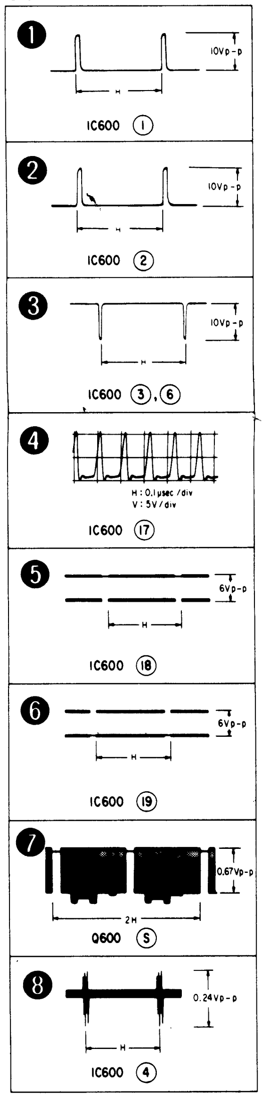
– Ref. No. VC-38, VC-39, VC-40 BOARDS: 1,000 series –

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

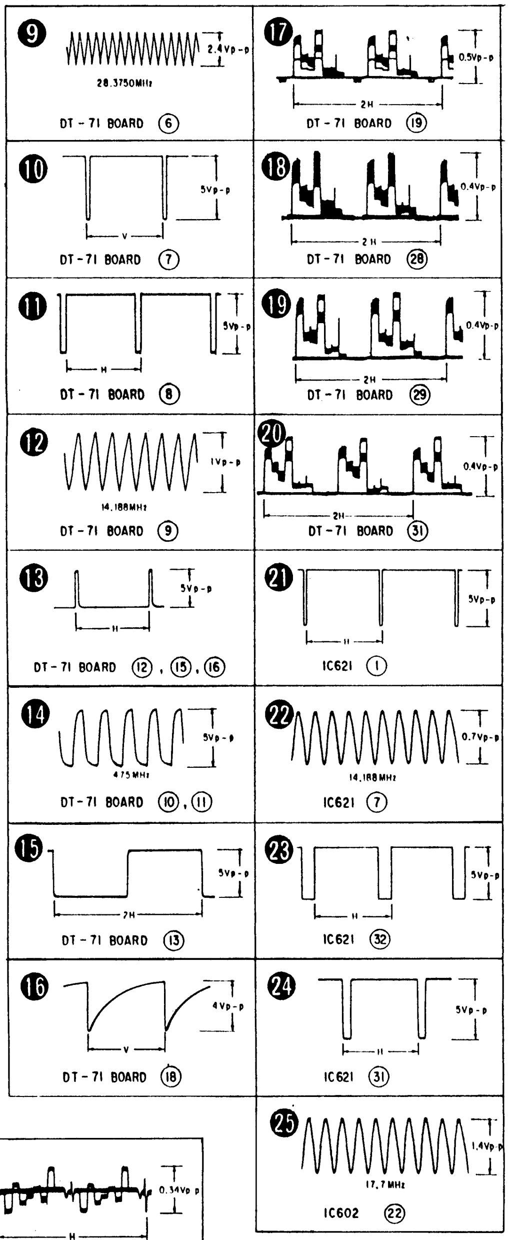
For printed wiring boards:
- ○— : indicates a lead wire mounted on the component side.
- ●— : indicates a lead wire mounted on the printed side.
- ▨ : Pattern from the side which enables seeing.
- Circled numbers refer to waveforms.

For schematic diagram:
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W (Chip resistors: 1/10W) unless otherwise noted.
  kΩ: 1000Ω, MΩ: 1000kΩ.
- All capacitors are in μF unless otherwise noted. pF: μμF 50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ▭ : nonflammable resistor.
- ▭ : fusible resistor.
- ☐ : panel designation.
- △ : internal component.
- ☐ : adjustment for repair.
- ▬ : B+ line.
- Voltages are dc between measurement points and ground unless otherwise noted.
- Readings are taken with a digital multimeter (DC10MΩ).
- Voltage variations may be noted due to normal production tolerances.
- ⇨ : IN/OUT direction of B line (+, −).
- Readings are taken with a color-bar signal input.
- Circled numbers refer to waveforms.

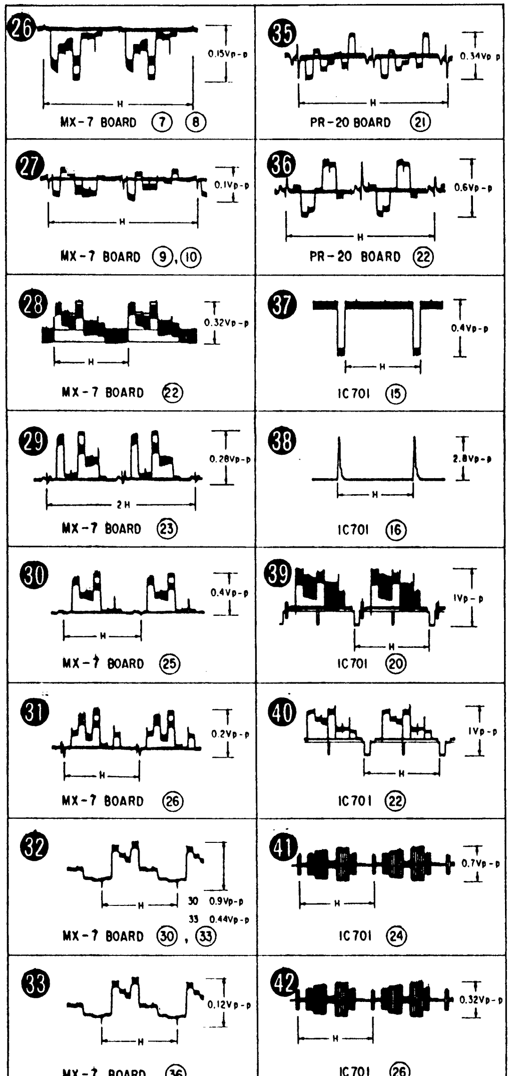
VC-38 BOARD



VC-39 BOARD



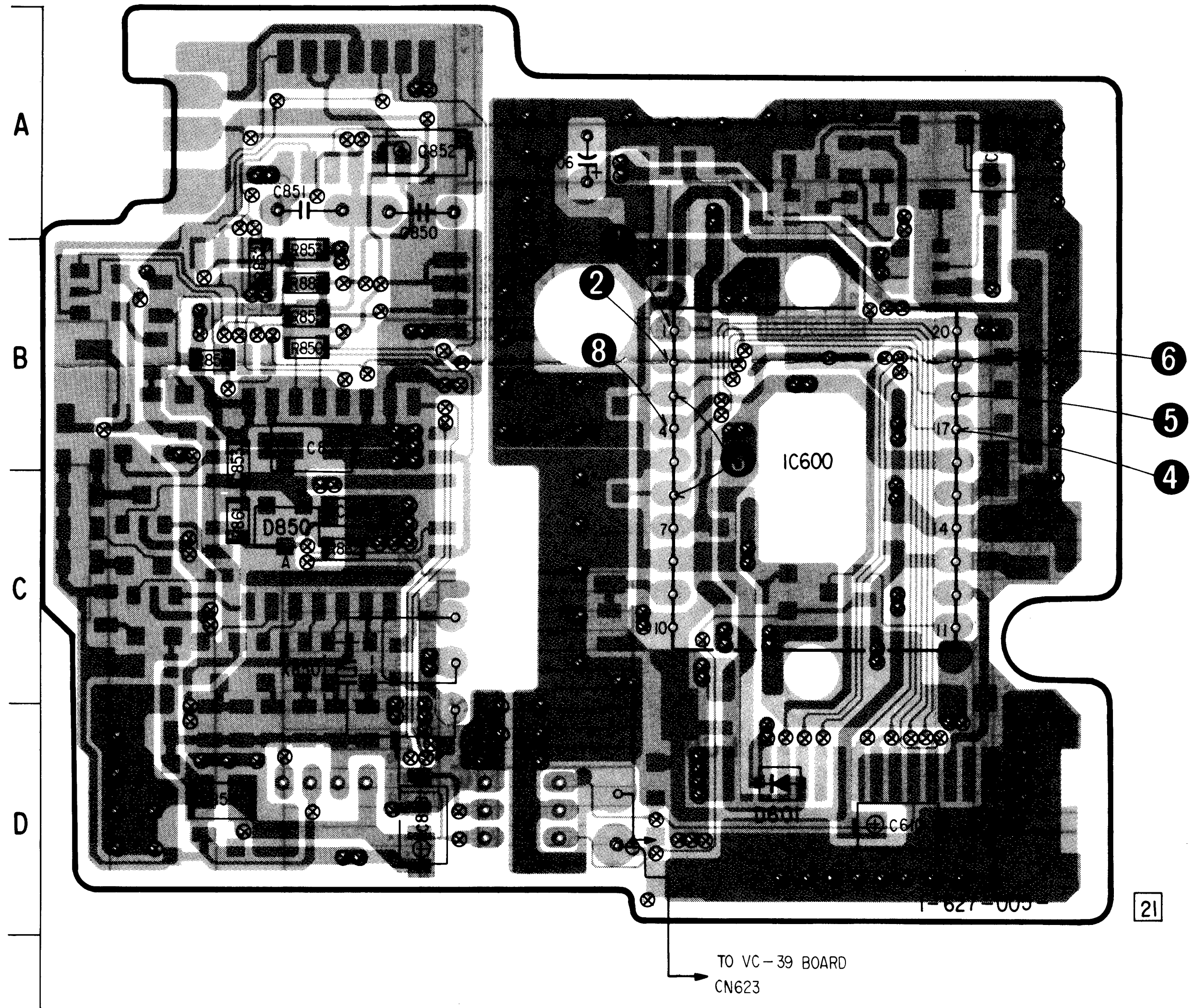
VC-40 BOARD



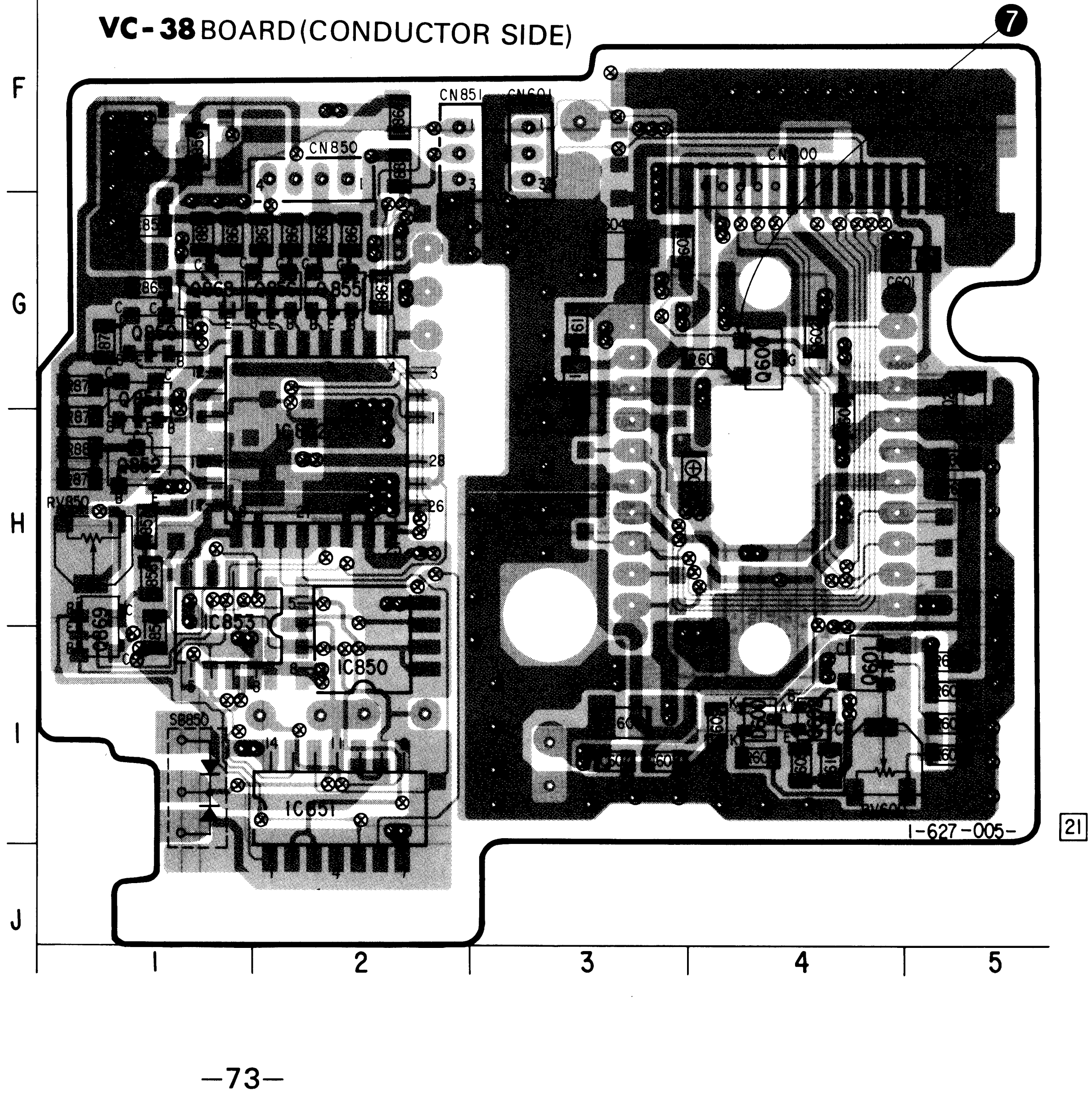
VC-38 BOARD

CN600	F-4
CN601	F-3
CN850	F-2
CN851	F-3
D600	I-4
D601	D-4
D850	C-2
IC850	I-2
IC851	I-2
IC852	H-2
IC853	I-2
Q600	G-4
Q601	I-4
Q602	I-4
Q850	G-1
Q851	G-1
Q852	H-1
Q855	G-2
Q856	G-2
Q868	G-1
Q869	H-1
RV600	I-4
RV850	H-1

VC-38 BOARD (COMPONENT SIDE)

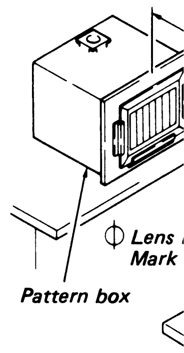


VC-38 BOARD (CONDUCTOR SIDE)

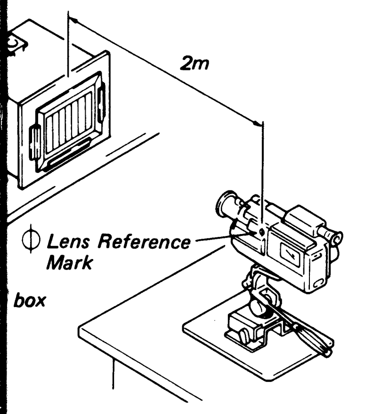


- Voltage and waveform
  (1) Sample object:
  (2) Voltage values:

1. Connection



waveform measuring conditions:
object: Pattern box color bars.
values: Between measurement point and ground, measured with a DC digital multimeter (impedance 10M-ohm or more).


2m
Lens Reference Mark
box

2. Adjust the zooming of camera and the tripod so that the output waveform of Fig. a and the picture of Fig. b can be obtain.

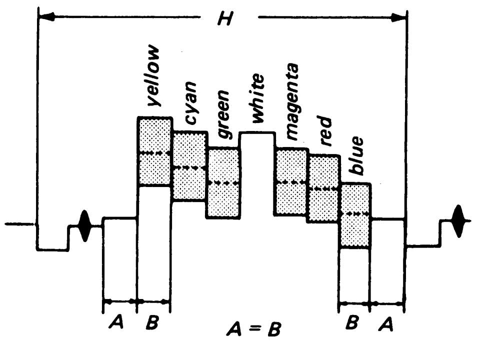

H
yellow
cyan
green
white
magenta
red
blue
A
B
A = B
B
A

Fig. a Camera output waveform

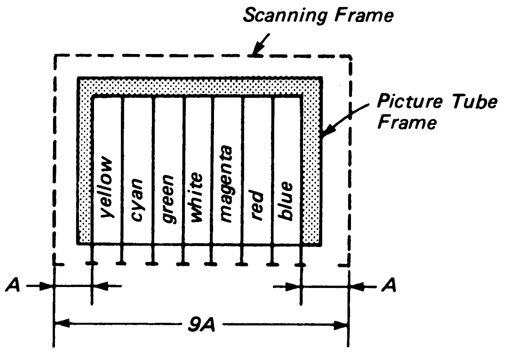

Scanning Frame
Picture Tube Frame
yellow
cyan
green
white
magenta
red
blue
A
A
9A

Fig. b Picture of TV monitor screen

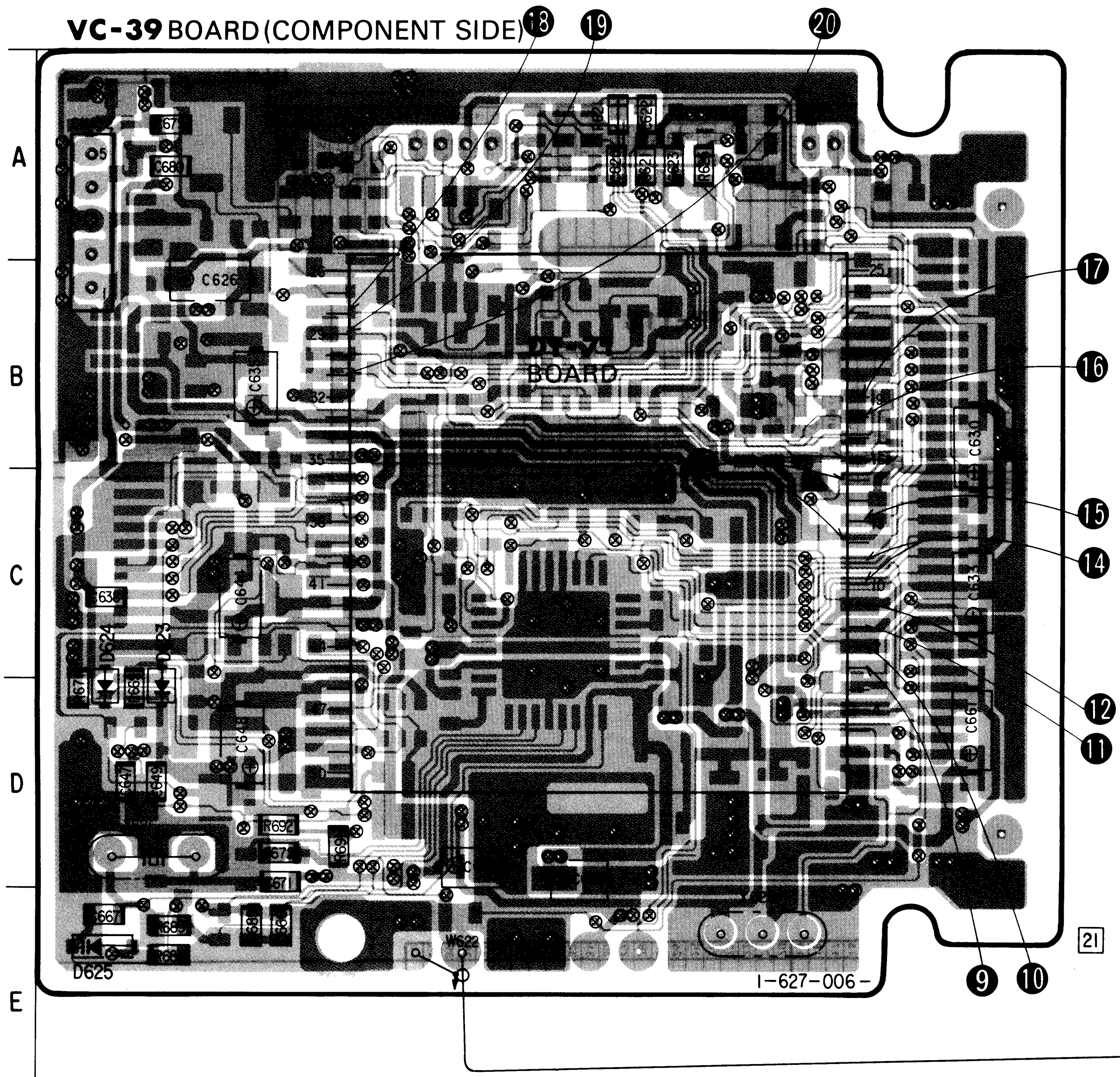
When indicating parts by reference number, please include the board name.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

VC-39 BOARD

CN620	J-3
CN622	A-1
CN623	J-4
D623	C-1
D624	C-1
D625	E-1
D626	J-3
IC620	J-2
IC621	H-3
Q621	I-3
Q622	I-3
Q623	I-4
Q624	I-2
Q625	G-2
Q626	G-2
Q626	G-2
Q627	G-2
Q628	G-2
Q629	H-2
Q630	I-5
RV620	J-1
RV621	J-4
RV622	I-2
RV623	H-4

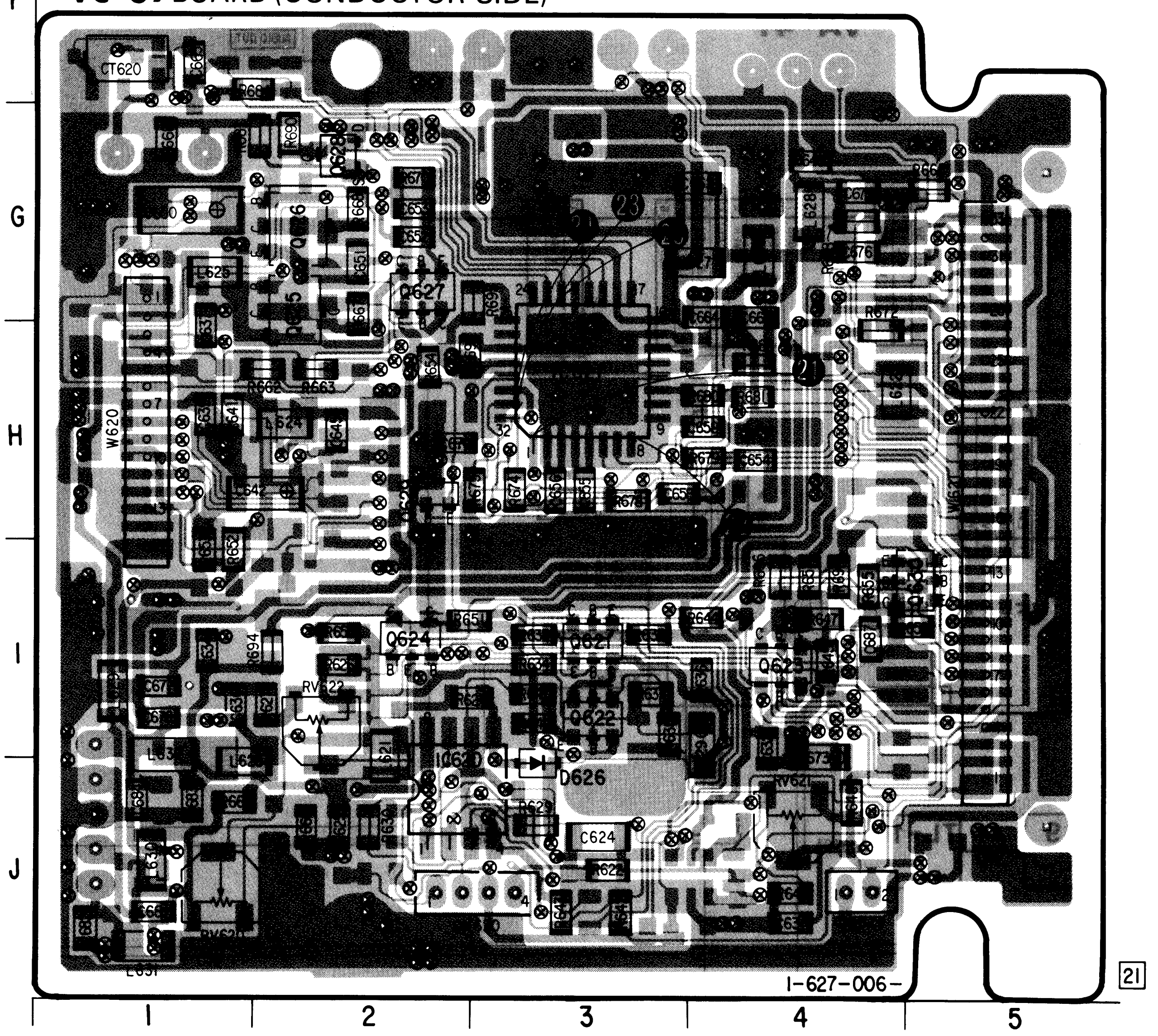
VC-39 BOARD (COMPONENT SIDE)


⑱
⑲
⑳
⑰
⑯
⑮
⑭
⑫
⑪
⑨
⑩
A
B
C
D
E
C626
C630
D624
D625
W622
BOARD
I-627-006-
21

VC-40 BOARD

CN701	D-5
CN702	C-7
CN703	B-7
CN704	D-2
CN705	D-3
D701	J-4
IC701	I-3
Q701	J-2
Q702	J-2
Q705	G-6
Q706	H-6
Q707	H-6
Q708	G-4
Q709	G-4
Q710	I-3
Q711	H-3
RV701	J-2
RV705	H-2
RV706	G-2
RV707	G-2
RV708	I-6
RV709	I-5
RV710	H-5
RV711	I-6
RV712	J-5
RV713	J-5
RV714	J-6
RV715	I-6
RV716	J-4
RV717	J-4
RV718	J-3
RV719	J-2
RV720	J-2
RV721	H-4
RV722	H-5
RV724	H-5

VC-39 BOARD (CONDUCTOR SIDE)


F
G
H
I
J
CT620
W620
Q627
Q624
Q621
Q622
Q623
RV622
IC620
D626
C624
RV621
RV620
L631
I-627-006-
21
1
2
3
4
5

rk ⚠ or dotted
afety.
cified.

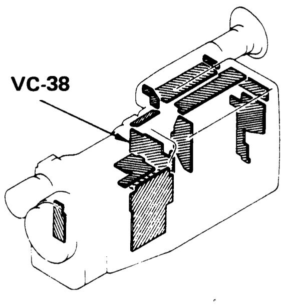
Note:

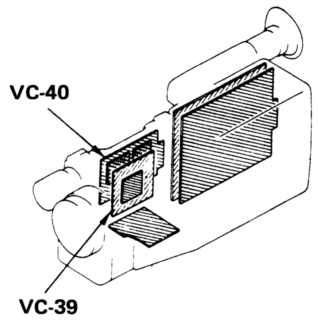
- ⊗ : Through hole.
- ▨ : Pattern of the rear side.

Caution:

Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

- Digital transistor (VC-39: Q624) is transistor with resistor. Refer to the VC-39 board schematic diagram for digital transistor.

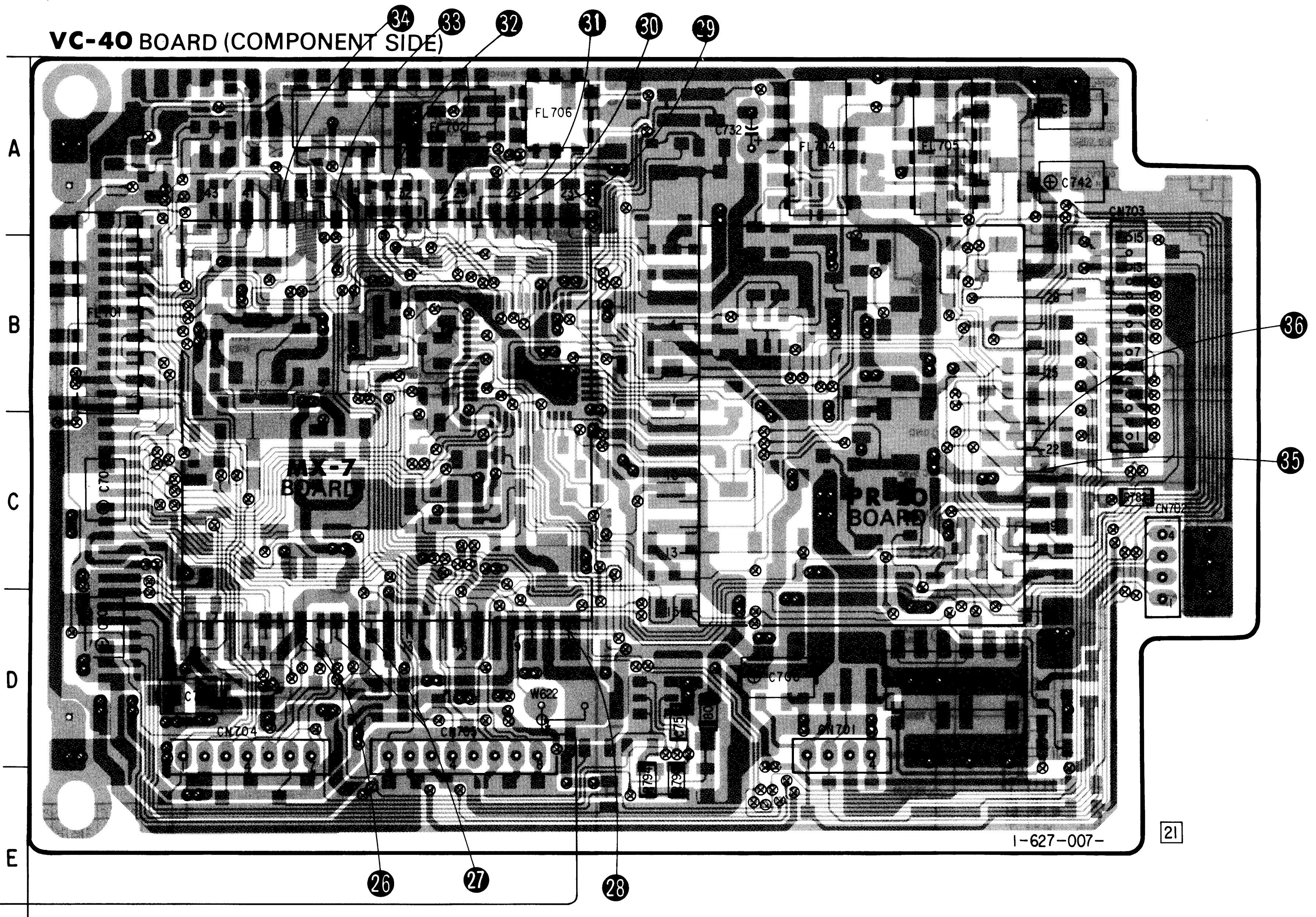




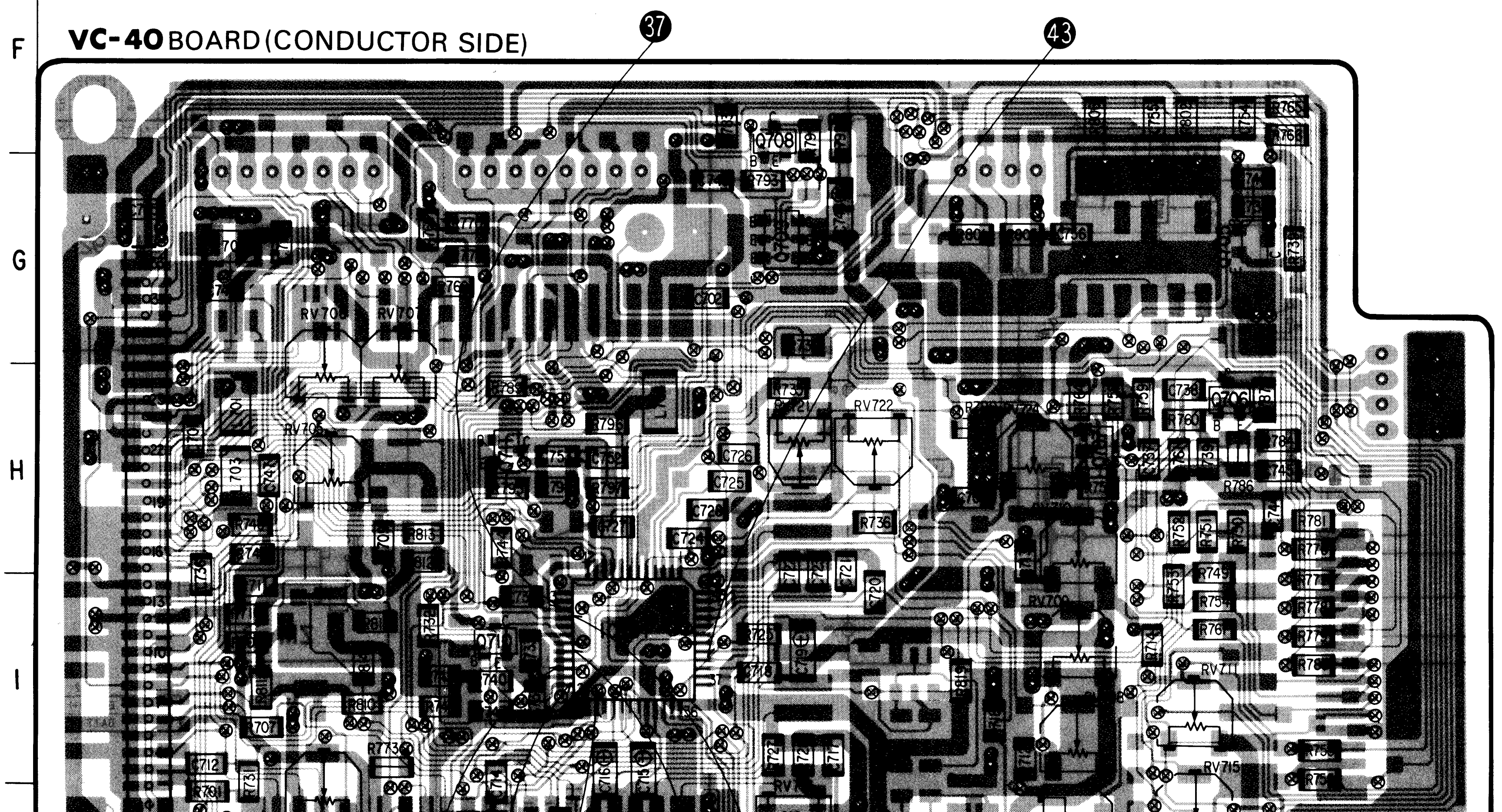
40 BOARD

01	D-5
02	C-7
03	B-7
04	D-2
05	D-3
1	J-4
01	I-3
1	J-2
2	J-2
5	G-6
6	H-6
7	H-6
8	G-4
9	G-4
0	I-3
1	H-3
01	J-2
05	H-2
06	G-2
07	G-2
08	I-6
09	I-5
10	H-5
11	I-6
12	J-5
13	J-5
14	J-6
15	I-6
16	J-4
17	J-4
18	J-3
19	J-2
20	J-2
21	H-4
22	H-5
24	H-5

VC-40 BOARD (COMPONENT SIDE)

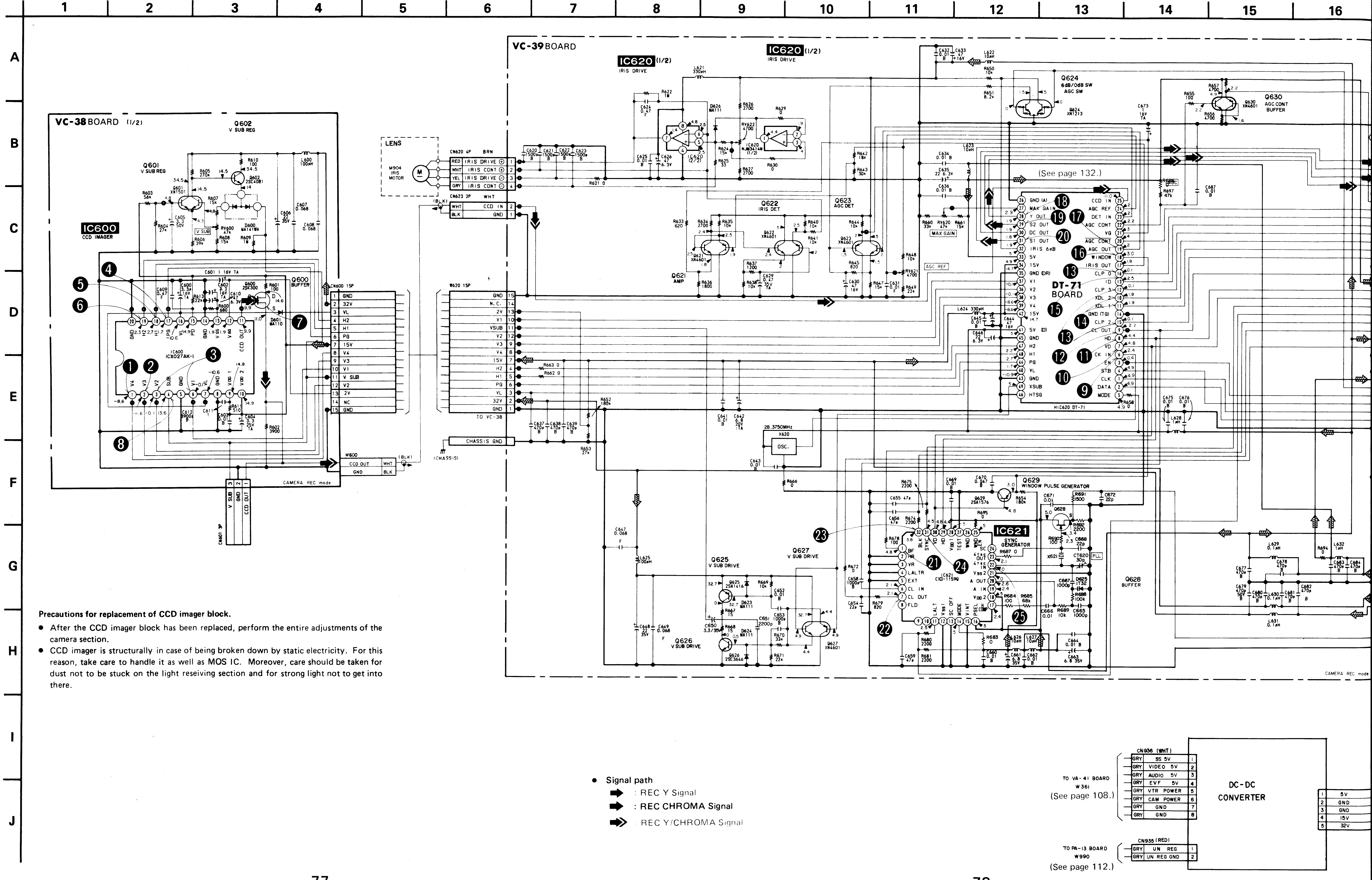

㉞
㉝
㉜
㉛
㉚
㉙
A
B
C
D
E
FL706
FL704
FL705
C732
C742
CN703
㊱
㉟
MX-7 BOARD
PR-40 BOARD
CN702
C760
W622
CN704
CN705
CN701
1-627-007-
21
㉖
㉗
㉘

VC-40 BOARD (CONDUCTOR SIDE)


㊲
㊸
F
G
H
I
J
Q708
RV702
RV707
RV703
RV722
RV721
RV709
RV711
RV715
RV713
RV714
RV718
RV717
RV701
1-627-007-
21
1
2
3
4
5
6
7
㊵
㊶
㊷
㊴
㊳

VC-38 (CCD IMAGER), VC-39 (TIMING/SYNC GENERATOR), VC-40 (CAMERA MATRIX, CAMERA ENCODER, TITLE MIX) SCHEMATIC DIAGRAM

– Ref. No. VC-38, VC-39, VC-40 BOARDS: 1,000 series –


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
VC-38 BOARD (1/2)
IC600 CCD IMAGER
IC600 ICX027AK-1
Q601 V SUB REG
Q602 V SUB REG
Q600 BUFFER
D600 MA141WA
D601 MA110
CN600 15P
CN601 3P
V SUB
GND
CCD OUT
W600
CCD OUT
WHT
BLK
(BLK)
CAMERA REC mode
LENS
M904 IRIS MOTOR
CN620 4P BRN
RED IRIS DRIVE ⊕
WHT IRIS CONT ⊕
YEL IRIS DRIVE ⊖
GRY IRIS CONT ⊖
CN623 2P WHT
WHT CCD IN
BLK GND
W620 15P
TO VC-38
CHASSIS GND
(CHASSIS)
VC-39 BOARD
IC620 (1/2) IRIS DRIVE
Q621 AMP
Q622 IRIS DET
Q623 AGC DET
Q624 6dB/0dB SW AGC SW
Q630 AGC CONT BUFFER
(See page 132.)
MAX GAIN
AGC REF
DT-71 BOARD
HIC620 DT-71
28.3750MHz X620 OSC.
Q625 V SUB DRIVE
Q626 V SUB DRIVE
Q627 V SUB DRIVE
Q629 WINDOW PULSE GENERATOR
Q628 BUFFER
IC621 SYNC GENERATOR CXD-1159Q
CAMERA REC mode
CN936 (WHT)
TO VA-41 BOARD W361 (See page 108.)
DC-DC CONVERTER
CN935 (RED)
TO PA-13 BOARD W990 (See page 112.)

GRY	SS 5V	1	
GRY	VIDEO 5V	2	
GRY	AUDIO 5V	3	
GRY	EVF 5V	4	
GRY	VTR POWER	5	
GRY	CAM POWER	6	
GRY	GND	7	
GRY	GND	8	

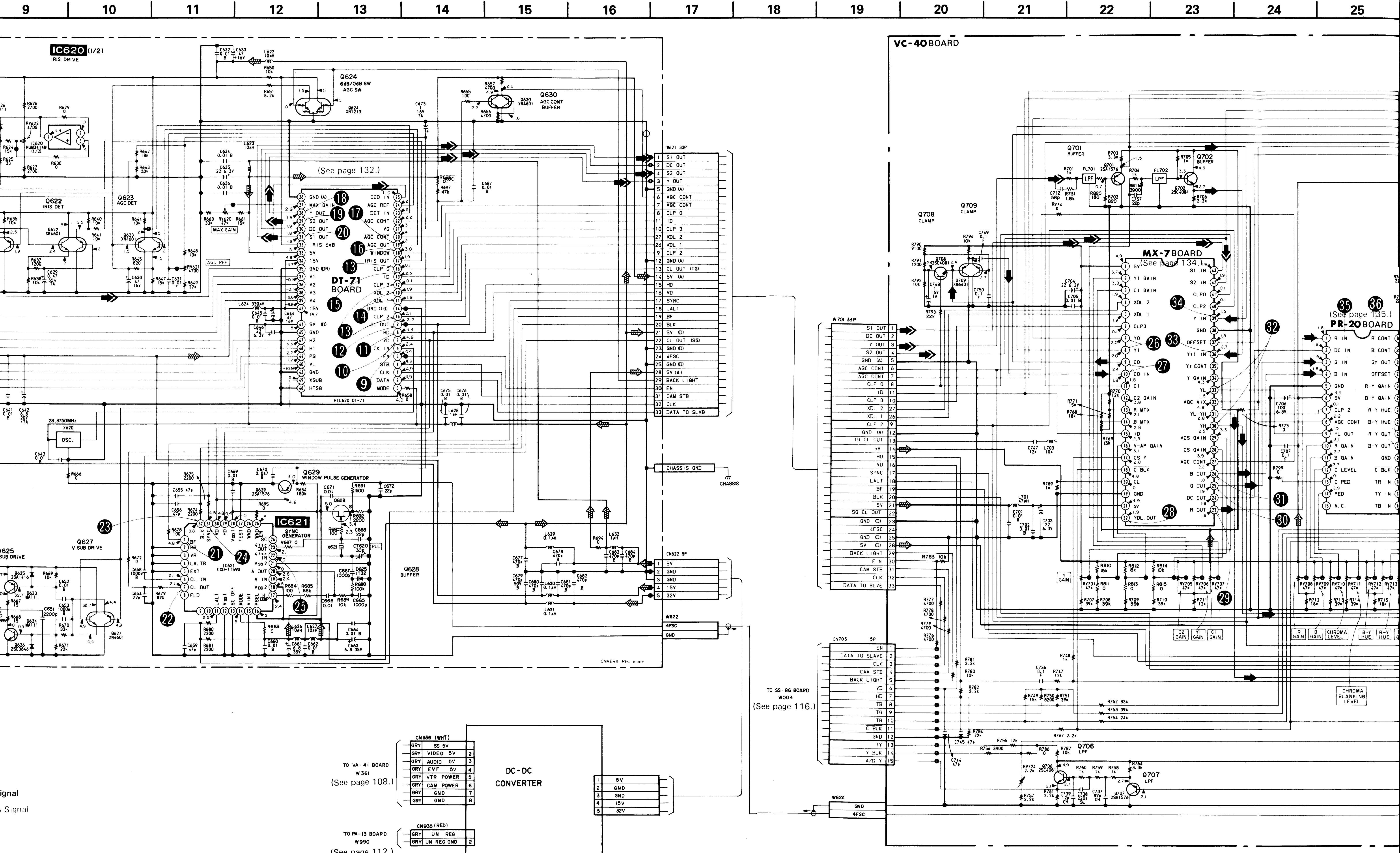
1	5V
2	GND
3	GND
4	15V
5	32V

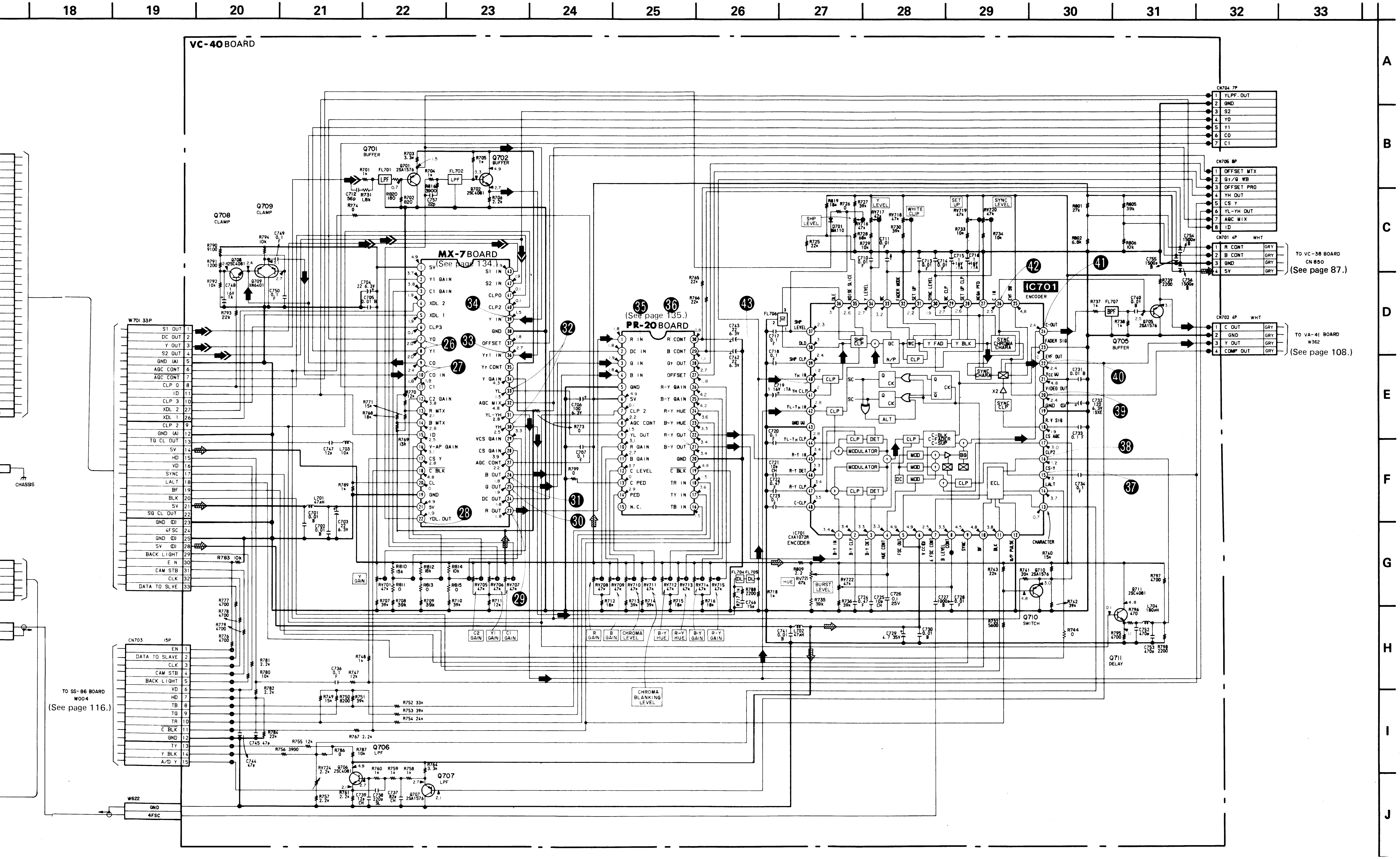
GRY	UN REG	1
GRY	UN REG GND	2

Precautions for replacement of CCD imager block.

- After the CCD imager block has been replaced, perform the entire adjustments of the camera section.
- CCD imager is structurally in case of being broken down by static electricity. For this reason, take care to handle it as well as MOS IC. Moreover, care should be taken for dust not to be stuck on the light reseiving section and for strong light not to get into there.

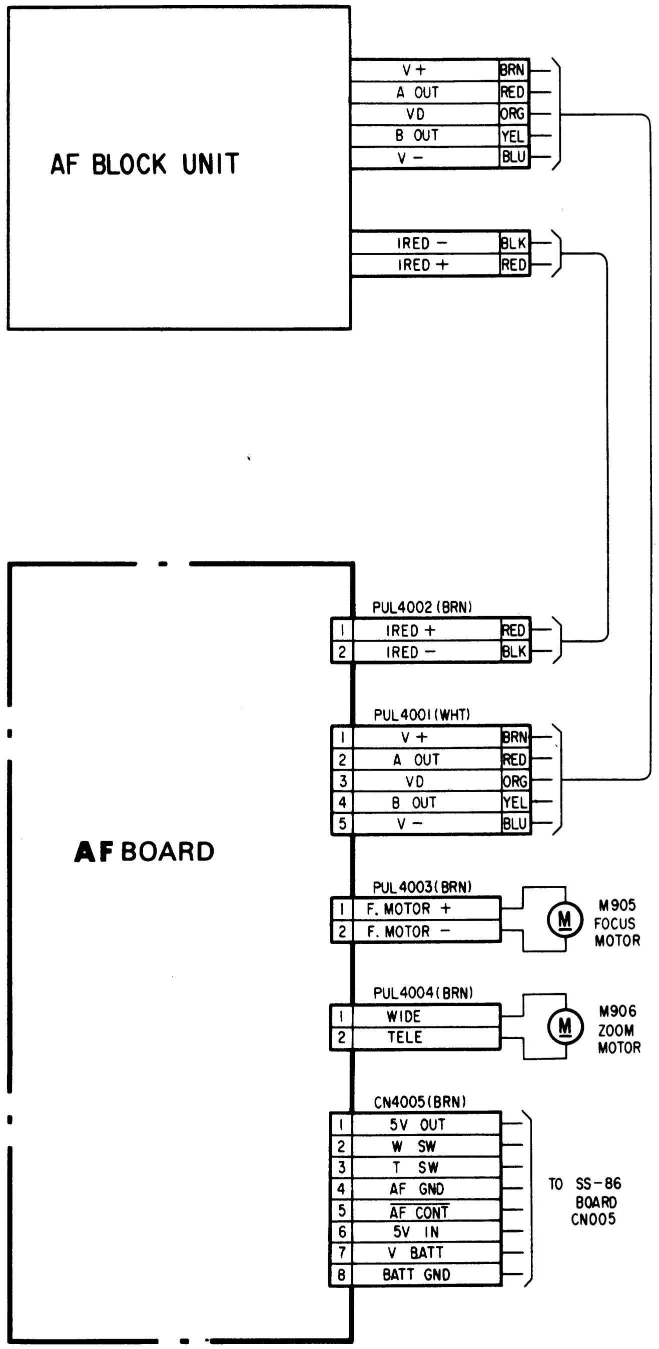
- Signal path
  - ➡ : REC Y Signal
  - ➡ : REC CHROMA Signal
  - ⇛ : REC Y/CHROMA Signal


9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
IC620 (1/2)
IRIS DRIVE
Q622
IRIS DET
Q623
AGC DET
Q624
6dB/0dB SW
AGC SW
Q630
AGC CONT
BUFFER
(See page 132.)
MAX GAIN
AGC REF
DT-71 BOARD
HIC620 DT-71
W621 33P
S1 OUT
DC OUT
S2 OUT
Y OUT
GND (A)
AGC CONT
CLP 0
ID
CLP 3
XDL 2
XDL 1
CLP 2
CL OUT (TG)
5V (A)
HD
VD
SYNC
LALT
BF
BLK
5V (D)
CL OUT (SG)
GND (D)
4FSC
BACK LIGHT
EN
CAM STB
CLK
DATA TO SLVB
CHASSIS GND
CHASSIS
28.3750MHz
X620
OSC.
Q625
SUB DRIVE
Q627
V SUB DRIVE
Q629
WINDOW PULSE GENERATOR
IC621
SYNC GENERATOR
IC621 CXD-1159Q
Q628
BUFFER
CN622 5P
5V
GND
15V
32V
W622
4FSC
GND
CAMERA REC mode
CN936 (WHT)
GRY
SS 5V
VIDEO 5V
AUDIO 5V
EVF 5V
VTR POWER
CAM POWER
TO VA-41 BOARD
W361
(See page 108.)
DC-DC CONVERTER
CN935 (RED)
UN REG
UN REG GND
TO PA-13 BOARD
W990
(See page 112.)
ignal
Signal
VC-40 BOARD
W701 33P
DATA TO SLVE
TG CL OUT
SG CL OUT
TO SS-86 BOARD
W004
(See page 116.)
CN703 15P
TB
TG
TR
C BLK
TY
Y BLK
A/D Y
Q701
BUFFER
Q702
BUFFER
FL701
FL702
LPF
Q708
CLAMP
Q709
CLAMP
MX-7 BOARD
(See page 134.)
PR-20 BOARD
(See page 135.)
Y1 GAIN
C1 GAIN
V-AP GAIN
CS Y
VCS GAIN
CS GAIN
AGC CONT
B OUT
G OUT
DC OUT
R OUT
YDL. OUT
OFFSET
Y GAIN
AGC MIX
R IN
G IN
B IN
R CONT
B CONT
R-Y GAIN
B-Y GAIN
R-Y HUE
B-Y HUE
YL OUT
R GAIN
B GAIN
C LEVEL
C PED
PED
N.C.
Y GAIN
C2 GAIN
Y1 GAIN
C1 GAIN
R GAIN
B GAIN
CHROMA LEVEL
B-Y HUE
R-Y HUE
CHROMA BLANKING LEVEL
Q706
LPF
Q707
LPF


18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
A
B
C
D
E
F
G
H
I
J
VC-40 BOARD
MX-7 BOARD
(See page 134.)
PR-20 BOARD
(See page 135.)
IC701
ENCODER
IC701
CXA1072R
ENCODER
Q701
BUFFER
Q702
BUFFER
Q705
BUFFER
Q706
LPF
Q707
LPF
Q708
CLAMP
Q709
CLAMP
Q710
SWITCH
Q711
DELAY
LPF
BPF
W701 33P
S1 OUT
DC OUT
Y OUT
S2 OUT
GND (A)
AGC CONT
AGC CONT
CLP 0
ID
CLP 3
XDL 2
XDL 1
CLP 2
GND (A)
TG CL OUT
5V
HD
VD
SYNC
LALT
BF
BLK
5V
SG CL OUT
GND (D)
4FSC
GND (D)
5V (D)
BACK LIGHT
E N
CAM STB
CLK
DATA TO SLVE
CN703 15P
EN
DATA TO SLAVE
CLK
CAM STB
BACK LIGHT
VD
HD
TB
TG
TR
C BLK
GND
TY
Y BLK
A/D Y
TO SS-86 BOARD
W004
(See page 116.)
W622
GND
4FSC
CHASSIS
CN704 7P
YLPF. OUT
GND
S2
Y0
Y1
C0
C1
CN705 8P
OFFSET MTX
Gr/B WB
OFFSET PRO
YH OUT
CS Y
YL-YH OUT
AGC MIX
ID
CN701 4P WHT
R CONT
B CONT
GND
5V
GRY
TO VC-38 BOARD
CN850
(See page 87.)
CN702 4P WHT
C OUT
GND
Y OUT
COMP OUT
TO VA-41 BOARD
W362
(See page 108.)
Y GAIN
C2 GAIN
Y1 GAIN
C1 GAIN
R GAIN
B GAIN
CHROMA LEVEL
B-Y HUE
R-Y HUE
B-Y GAIN
R-Y GAIN
CHROMA BLANKING LEVEL
HUE
BURST LEVEL
SHP LEVEL
Y LEVEL
WHITE CLIP
SET UP
SYNC LEVEL
CHARACTER
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43

VC-38 (AUTO WHITE BALANCE) PRINTED WIRING BOARD

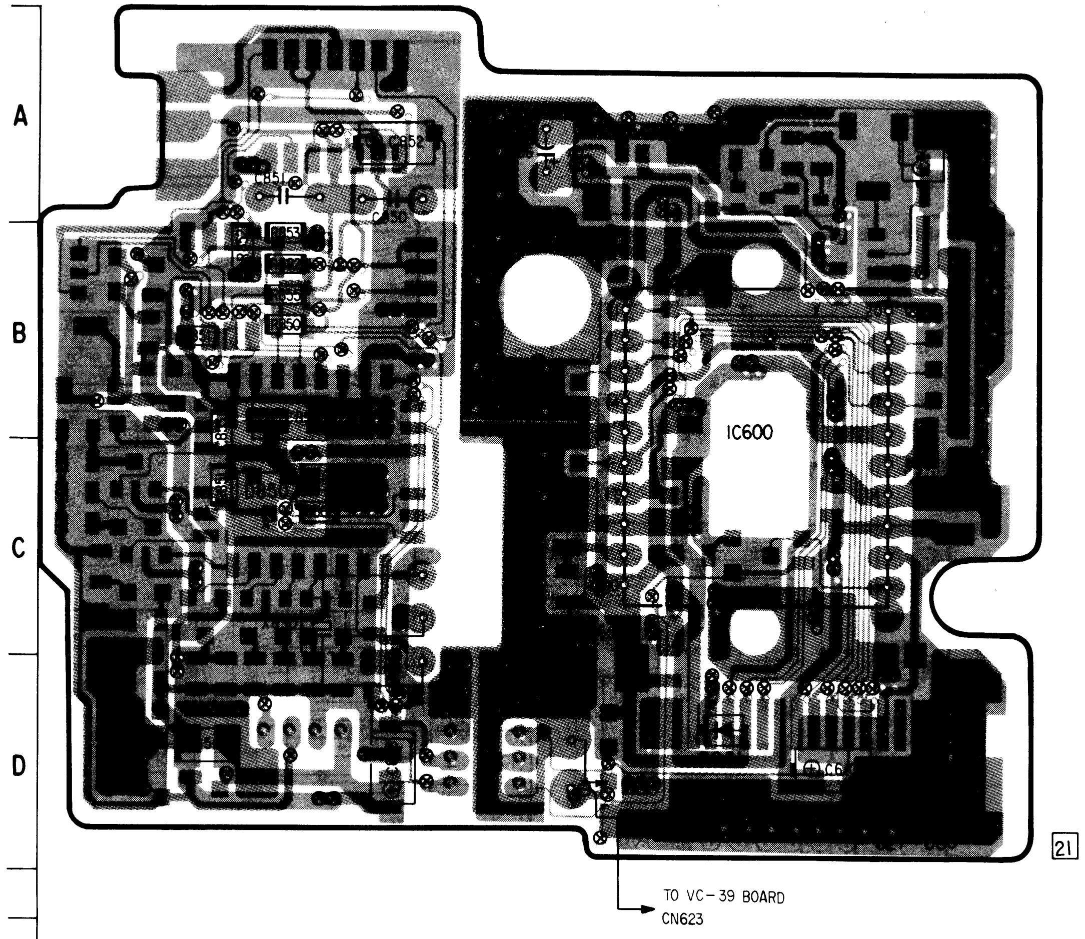
– Ref. No. VC-38 BOARD: 1,000 series –


AF BLOCK UNIT
V+
A OUT
VD
B OUT
V−
BRN
RED
ORG
YEL
BLU
IRED −
IRED +
BLK
RED
AF BOARD
PUL4002 (BRN)
1 IRED +
2 IRED −
RED
BLK
PUL4001 (WHT)
1 V+
2 A OUT
3 VD
4 B OUT
5 V−
BRN
RED
ORG
YEL
BLU
PUL4003 (BRN)
1 F. MOTOR +
2 F. MOTOR −
M
M905
FOCUS
MOTOR
PUL4004 (BRN)
1 WIDE
2 TELE
M
M906
ZOOM
MOTOR
CN4005 (BRN)
1 5V OUT
2 W SW
3 T SW
4 AF GND
5 AF CONT
6 5V IN
7 V BATT
8 BATT GND
TO SS-86
BOARD
CN005

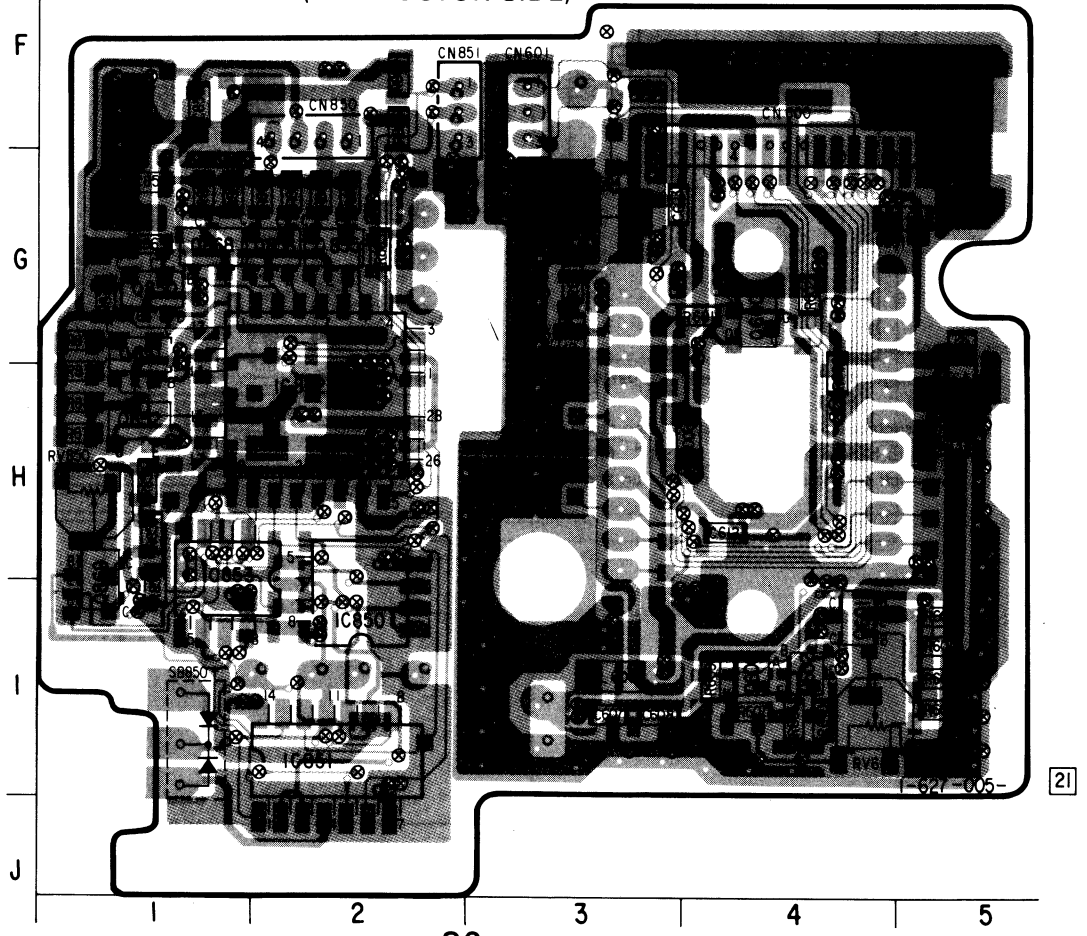
VC-38 BOARD

CN600	F-4
CN601	F-3
CN850	F-2
CN851	F-3
D600	I-4
D601	D-4
D850	C-2
IC850	I-2
IC851	I-2
IC852	H-2
IC853	I-2
Q600	G-4
Q601	I-4
Q602	I-4
Q850	G-1
Q851	G-1
Q852	H-1
Q855	G-2
Q856	G-2
Q868	G-1
Q869	H-1
RV600	I-4
RV850	H-1

VC-38 BOARD (COMPONENT SIDE)


A
B
C
D
IC600
IC852
IC850
21
TO VC-39 BOARD
CN623

VC-38 BOARD (CONDUCTOR SIDE)


F
G
H
I
J
1
2
3
4
5
CN851
CN601
CN850
CN600
RV850
IC853
IC850
IC851
S8850
RV600
1-627-005-
21

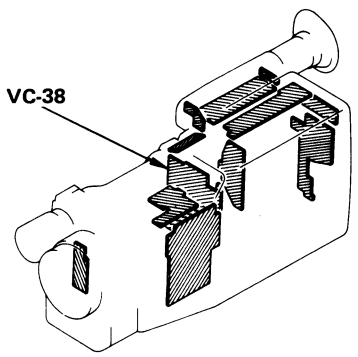
Note on Printed Wiring Board:

- ⊗ : Through hole.
- ▨ : Pattern of the rear side.

Caution:

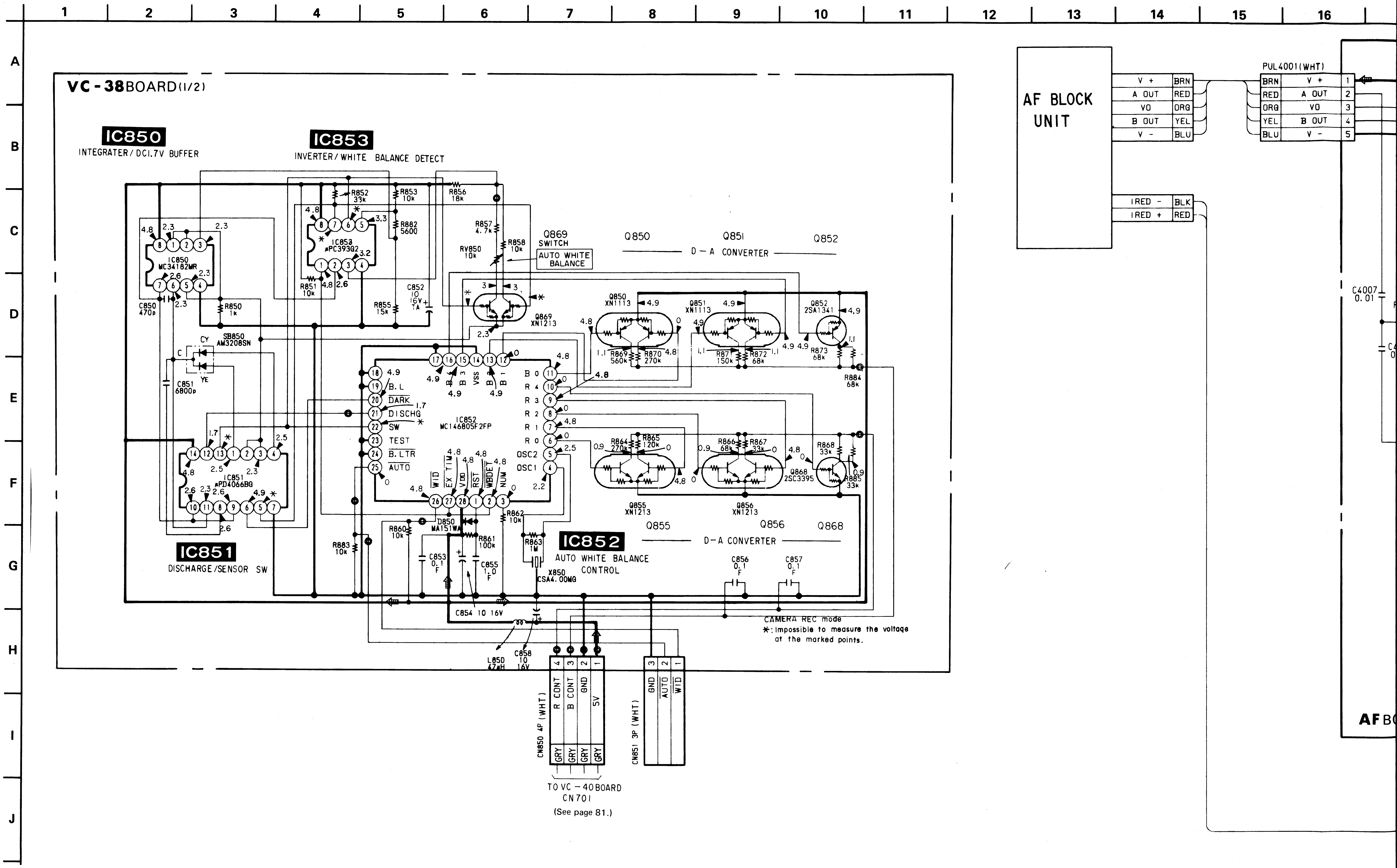
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

- Digital transistor (VC-38: Q850, Q851, Q852, Q855, Q856, Q868, Q869) is transistor with resistor. Refer to the VC-38 board schematic diagram for digital transistor.



VC-38 (AUTO WHITE BALANCE) SCHEMATIC DIAGRAM

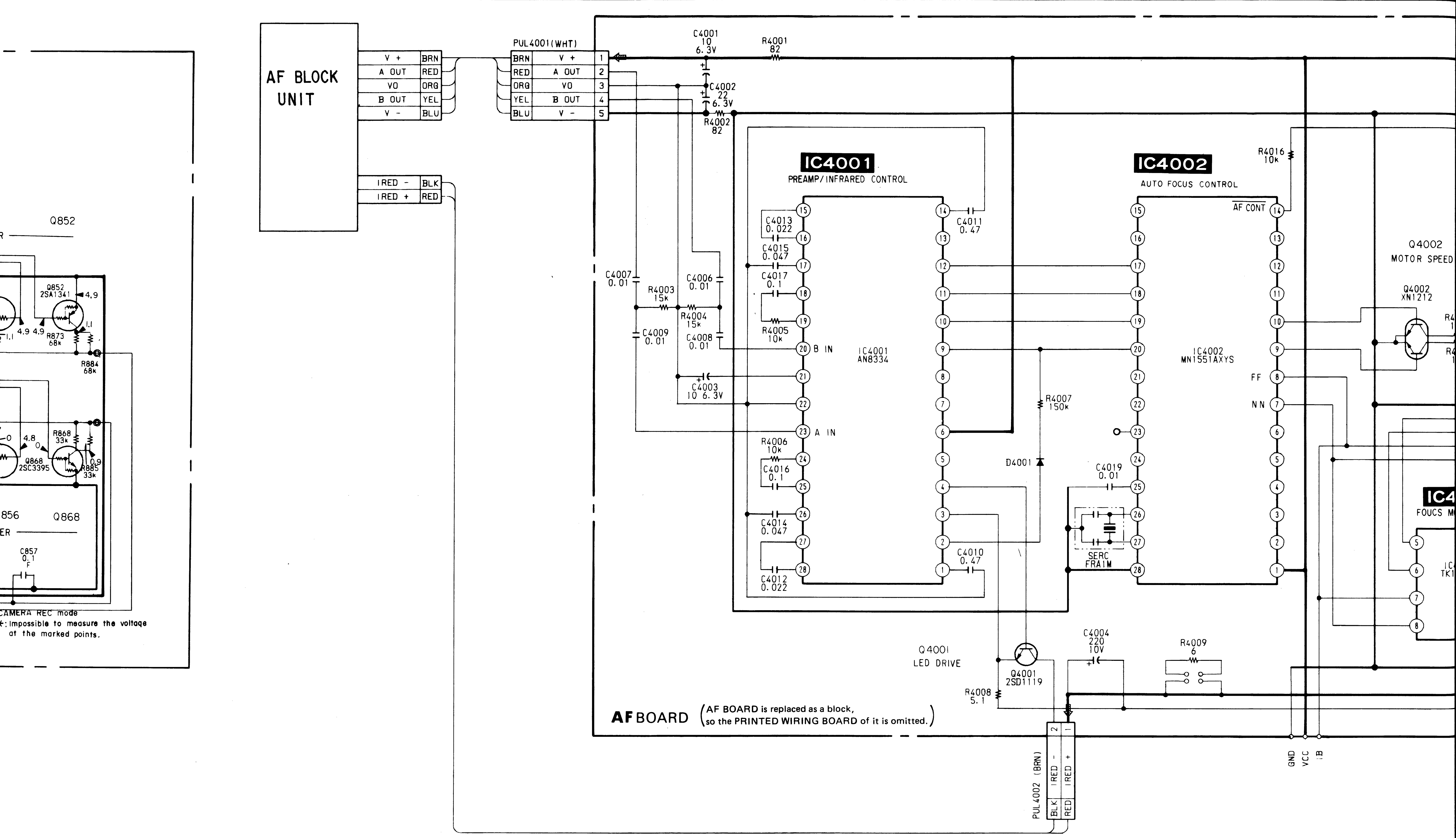
– Ref. No. VC-38 BOARD: 1,000 series –



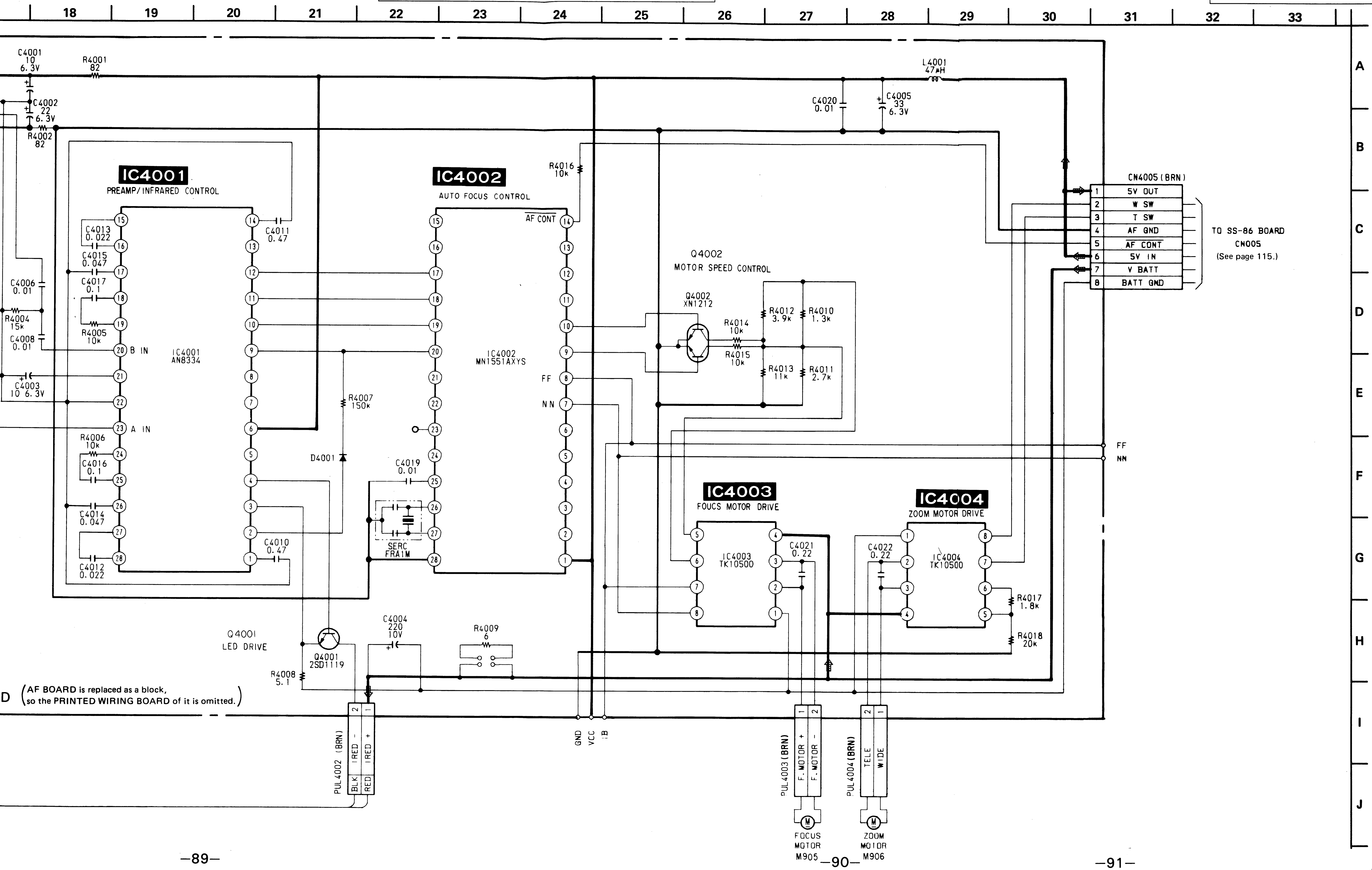
VC-38 BOARD (1/2)
IC850
INTEGRATER/DC1.7V BUFFER
IC850 MC34182MR
IC853
INVERTER/WHITE BALANCE DETECT
IC853 μPC393G2
IC851
DISCHARGE/SENSOR SW
IC851 μPD4066BG
IC852
AUTO WHITE BALANCE CONTROL
IC852 MC146805F2FP
SB850 AM3208SN
Q869 SWITCH
AUTO WHITE BALANCE
Q869 XN1213
Q850 Q851 Q852
D – A CONVERTER
Q850 XN1113
Q851 XN1113
Q852 2SA1341
Q855 Q856 Q868
D – A CONVERTER
Q855 XN1213
Q856 XN1213
Q868 2SC3395
D850 MA151WA
X850 CSA4.00MG
L850 47μH
C858 10 16V
C854 10 16V
AF BLOCK UNIT
V + A OUT VO B OUT V –
BRN RED ORG YEL BLU
IRED – IRED +
BLK RED
PUL4001 (WHT)
C4007 0.01
AF BL
CN850 4P (WHT)
R CONT B CONT GND 5V
GRY GRY GRY GRY
CN851 3P (WHT)
GND AUTO WID
TO VC – 40 BOARD CN701
(See page 81.)

CAMERA REC mode

*: Impossible to measure the voltage at the marked points.


AF BLOCK UNIT
V +
A OUT
VO
B OUT
V -
BRN
RED
ORG
YEL
BLU
IRED -
IRED +
BLK
RED
PUL4001(WHT)
C4001 10 6.3V
R4001 82
C4002 22 6.3V
R4002 82
IC4001
PREAMP/INFRARED CONTROL
IC4001 AN8334
B IN
A IN
C4013 0.022
C4015 0.047
C4017 0.1
R4005 10k
R4006 10k
C4016 0.1
C4014 0.047
C4012 0.022
C4011 0.47
C4010 0.47
C4007 0.01
C4009 0.01
R4003 15k
R4004 15k
C4006 0.01
C4008 0.01
C4003 10 6.3V
R4007 150k
D4001
IC4002
AUTO FOCUS CONTROL
IC4002 MN1551AXYS
AF CONT
FF
NN
C4019 0.01
SERC FRAIM
R4016 10k
Q4002 MOTOR SPEED
Q4002 XN1212
IC4
FOUCS M
Q4001 LED DRIVE
Q4001 2SD1119
R4008 5.1
C4004 220 10V
R4009 6
GND
VCC
IB
PUL4002 (BRN)
IRED -
IRED +
BLK
RED
Q852
Q852 2SA1341
4.9
1.1
4.9 4.9
R873 68k
R884 68k
4.8
R868 33k
Q868 2SC3395
0.9
R885 33k
856
Q868
C857 0.1 F
CAMERA REC mode
✱: Impossible to measure the voltage at the marked points.

AF BOARD (AF BOARD is replaced as a block, so the PRINTED WIRING BOARD of it is omitted.)


18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
A
B
C
D
E
F
G
H
I
J
C4001 10 6.3V
R4001 82
C4002 22 6.3V
R4002 82
L4001 47µH
C4020 0.01
C4005 33 6.3V
IC4001
PREAMP/INFRARED CONTROL
IC4001 AN8334
B IN
A IN
C4013 0.022
C4015 0.047
C4017 0.1
R4005 10k
C4006 0.01
R4004 15k
C4008 0.01
C4003 10 6.3V
R4006 10k
C4016 0.1
C4014 0.047
C4012 0.022
C4011 0.47
C4010 0.47
R4007 150k
D4001
IC4002
AUTO FOCUS CONTROL
IC4002 MN1551AXYS
AF CONT
FF
NN
C4019 0.01
SERC FRA1M
R4016 10k
Q4002
MOTOR SPEED CONTROL
Q4002 XN1212
R4014 10k
R4015 10k
R4012 3.9k
R4010 1.3k
R4013 11k
R4011 2.7k
CN4005 (BRN)
1 5V OUT
2 W SW
3 T SW
4 AF GND
5 AF CONT
6 5V IN
7 V BATT
8 BATT GND
TO SS-86 BOARD CN005 (See page 115.)
FF
NN
IC4003
FOUCS MOTOR DRIVE
IC4003 TK10500
C4021 0.22
IC4004
ZOOM MOTOR DRIVE
IC4004 TK10500
C4022 0.22
R4017 1.8k
R4018 20k
Q4001
LED DRIVE
Q4001 2SD1119
R4008 5.1
C4004 220 10V
R4009 6
PUL4002 (BRN)
IRED −
IRED +
BLK
RED
GND
VCC
iB
PUL4003 (BRN)
F. MOTOR +
F. MOTOR −
PUL4004 (BRN)
TELE
WIDE
M
FOCUS MOTOR M905
ZOOM MOTOR M906

D (AF BOARD is replaced as a block, so the PRINTED WIRING BOARD of it is omitted.)

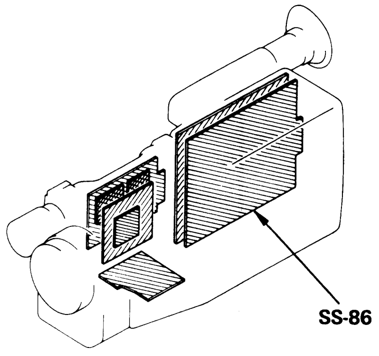
SS-86 (DIGITAL TITLER) PRINTED WIRING BOARD

– Ref. No. SS-86 BOARD: 2,000 series –

Note:
- ⊗ : Through hole.
- ▨ : Pattern of the rear side.

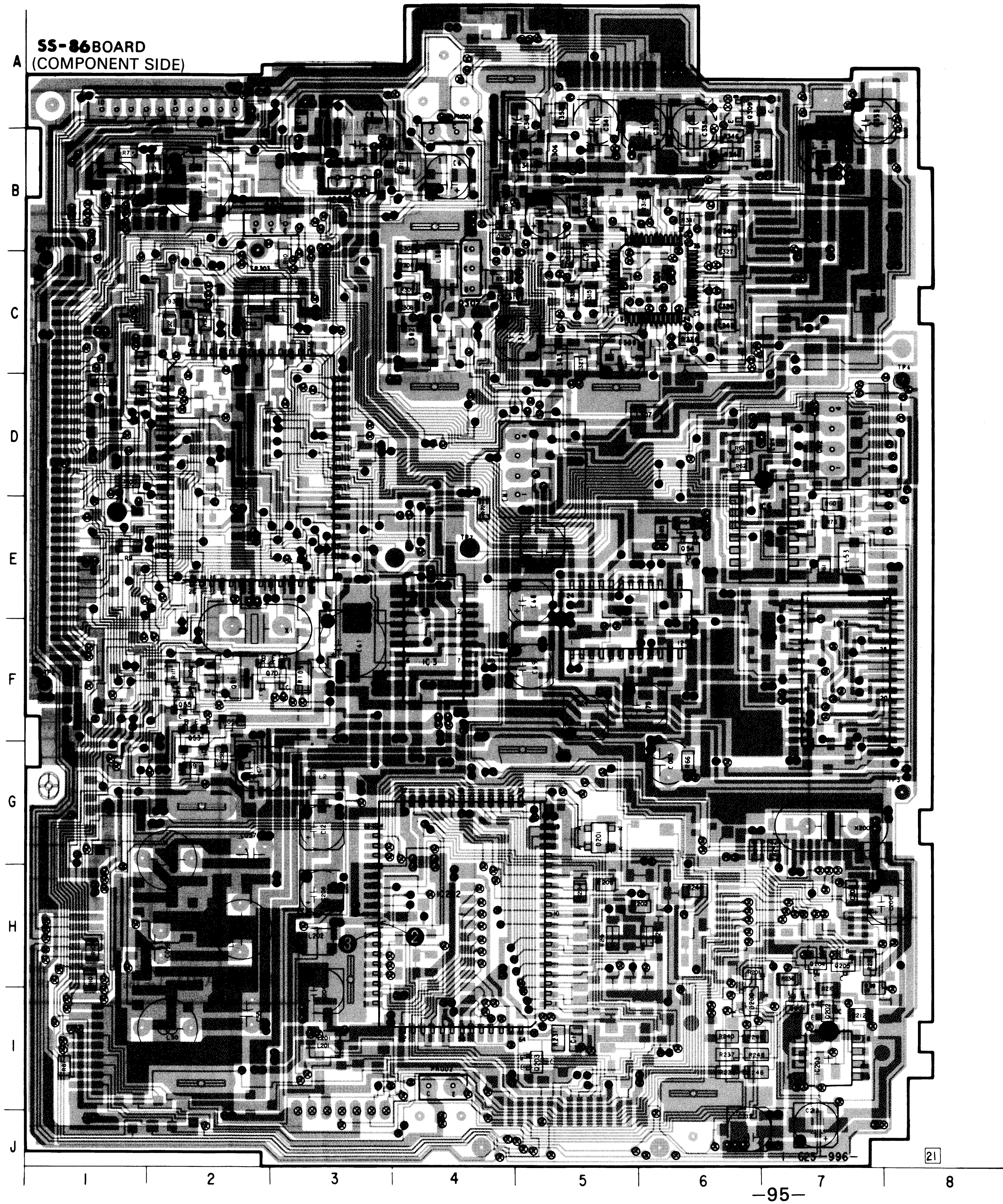
Caution:
Pattern face side: (Conductor Side) Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side) Parts on the parts face side seen from the parts face are indicated.

- Digital transistor (SS-86: Q203, Q204, Q205, Q206) is transistor with resistor.
  Refer to the SS-86 board schematic diagram for digital transitor.

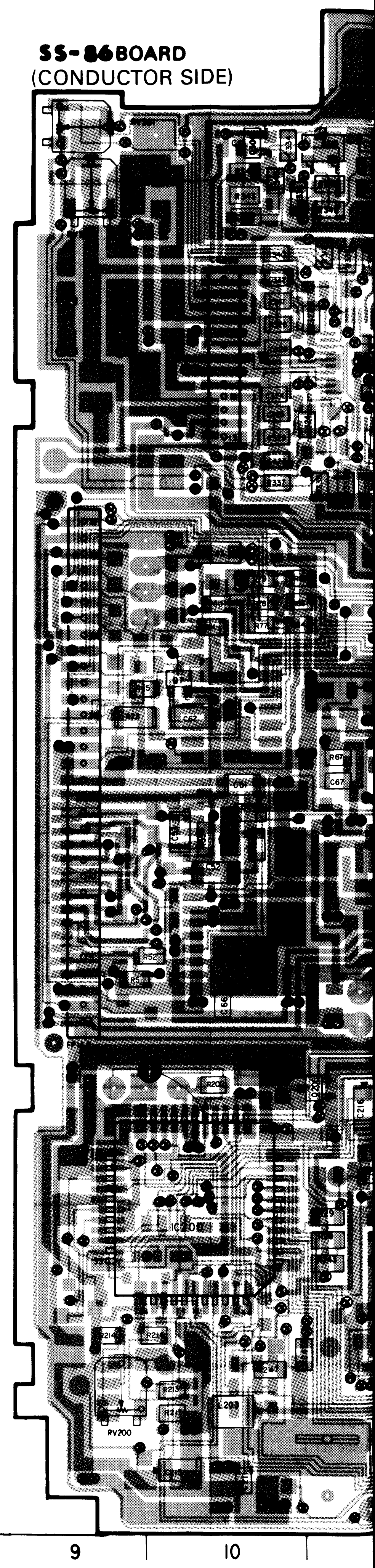


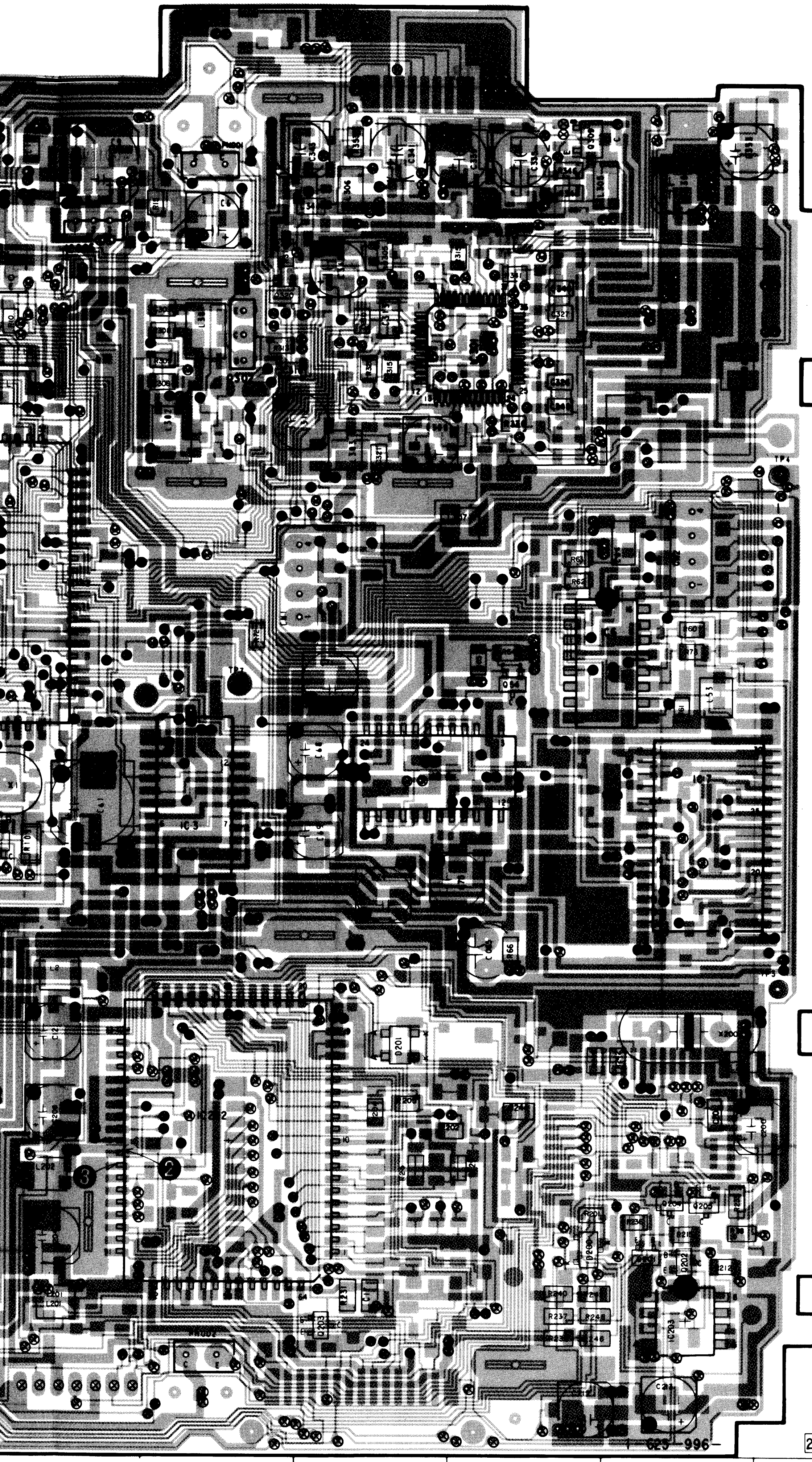
CN001	D-5
CN002	D-7
CN003	C-10
CN004	A-11
CN005	I-13
CN006	B-14
CN007	H-16
CT200	G-12
D003	E-15
D004	F-15
D050	I-15
D051	H-15
D200	I-6
D201	G-5
D203	G-11
IC001	D-2
IC002	B-15
IC003	F-4
IC004	F-5
IC005	B-3
IC006	E-6
IC007	F-7
IC200	H-10
IC201	H-12
IC202	H-4
IC203	I-7
IC301	C-6
Q001	B-2
Q002	B-15
Q005	B-13
Q006	G-15
Q007	E-10
Q008	G-14
Q051	H-15
Q052	H-15
Q053	G-2
Q054	E-6
Q055	F-2
Q070	F-3
Q071	F-15
Q073	F-15
Q074	F-15
Q076	F-14
Q078	F-14
Q079	F-15
Q080	F-14
Q081	F-2
Q201	I-7
Q202	I-7
Q203	I-5
Q204	H-7
Q205	H-7
Q206	G-11
Q302	C-4
Q303	C-13
Q304	B-11
Q305	B-5
Q307	C-11
Q308	A-10
Q309	A-6
Q310	A-11
Q311	A-12
Q312	A-12
Q313	B-12
Q314	B-12
Q315	B-12
Q316	A-12
Q317	C-11
Q318	C-11
Q319	D-15
Q320	C-5
Q321	E-15
RV001	C-14
RV002	D-15
RV200	I-9
RV301	A-9
RV302	B-9
RV306	A-12
TP001	C-1
TP002	F-1
TP003	G-8
TP004	D-8
TP006	E-1
TP007	E-4
TP303	C-23

SS-86 BOARD
(COMPONENT SIDE)

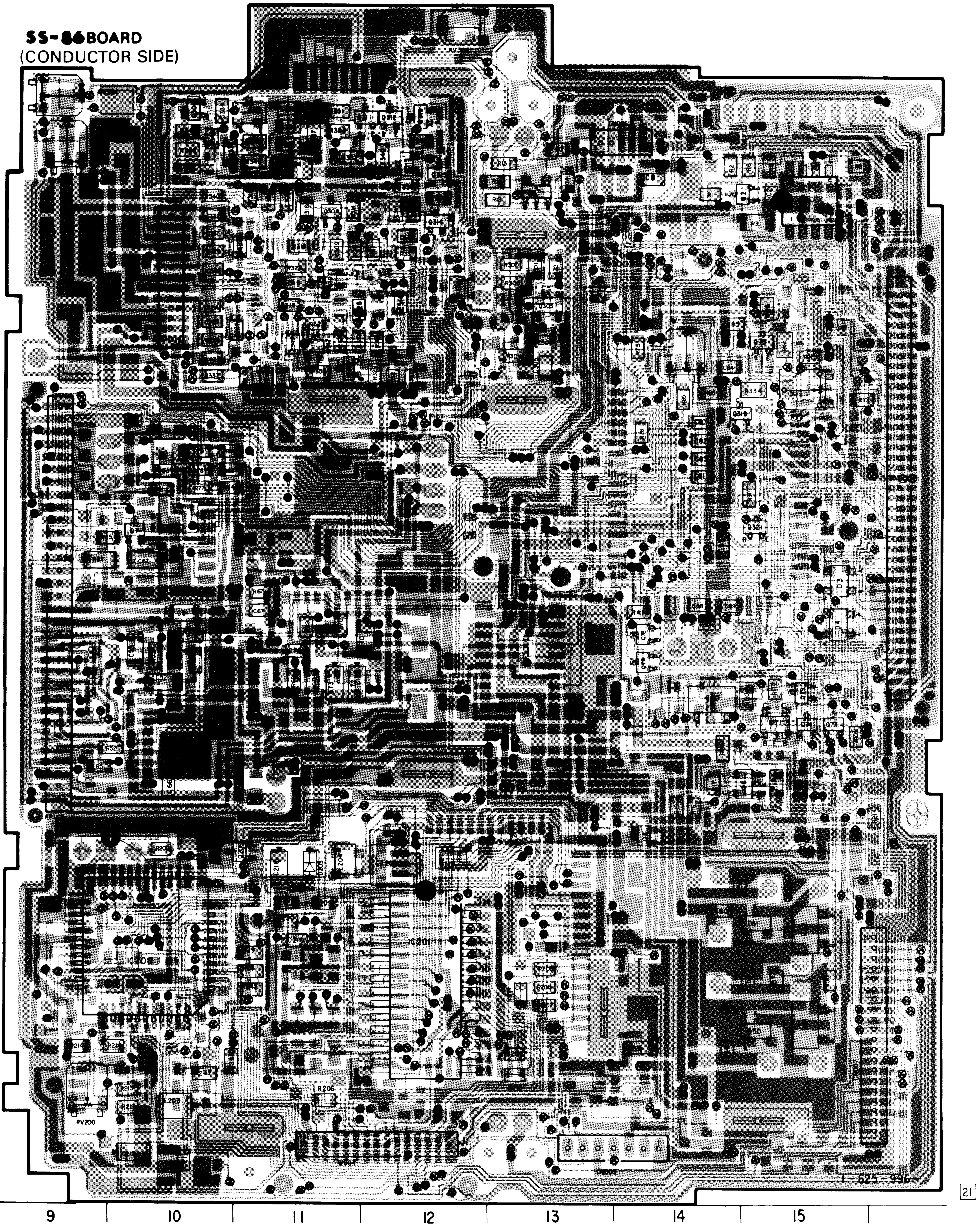


SS-86 BOARD
(CONDUCTOR SIDE)



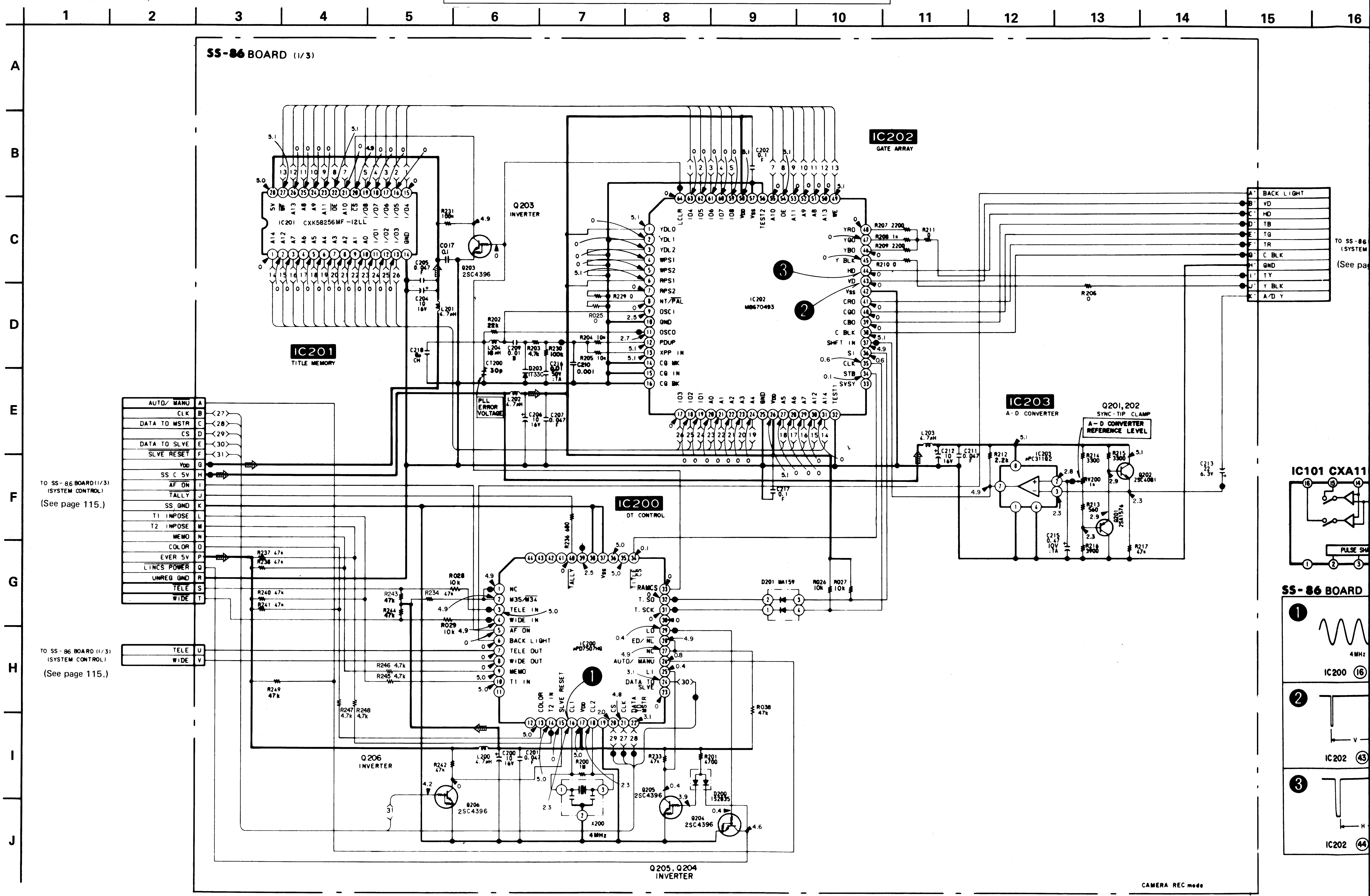

1-625-996-
21
3
4
5
6
7
8

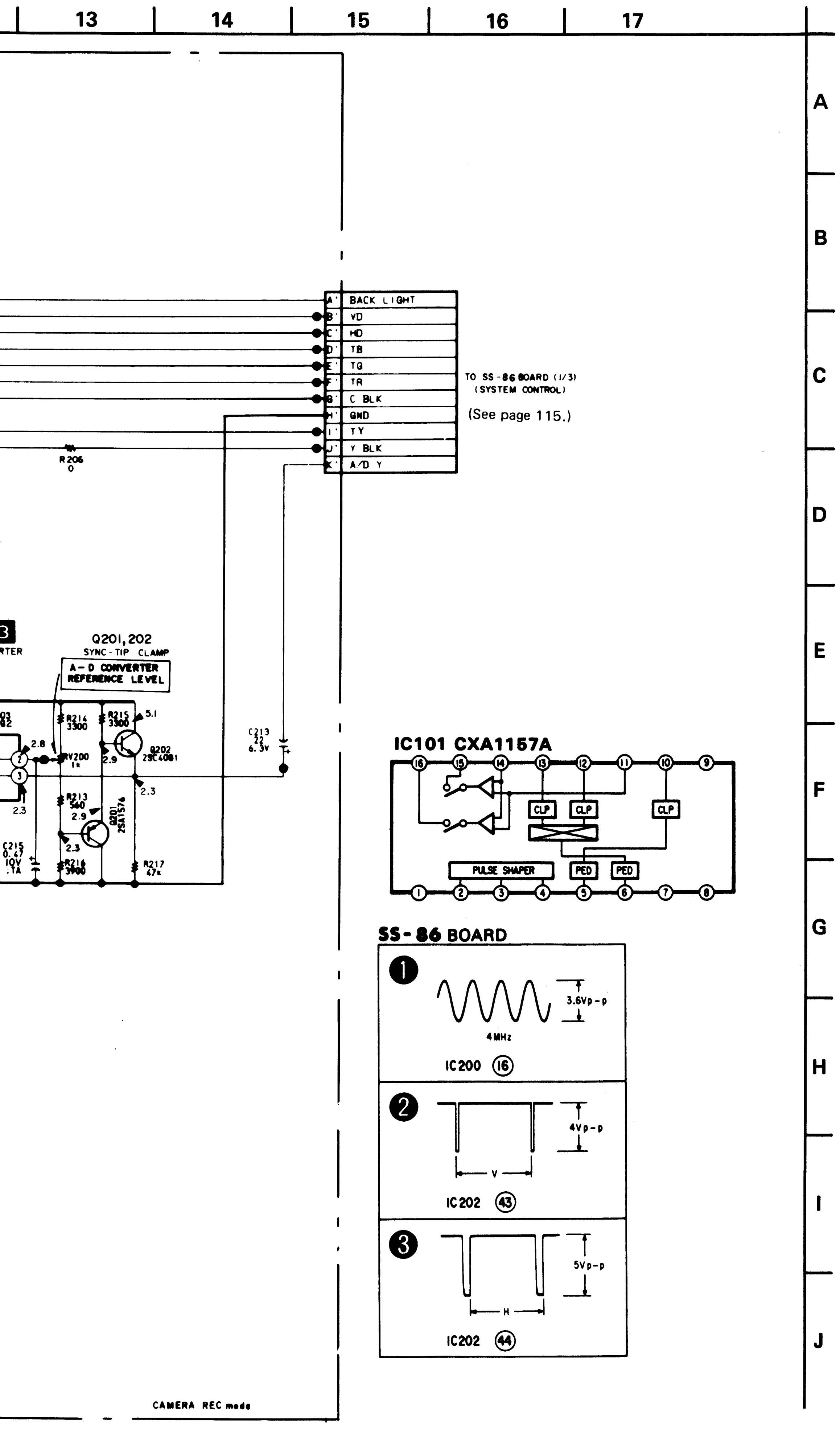
SS-86 BOARD
(CONDUCTOR SIDE)


1-625-996-
21
9
10
11
12
13
14
15

SS-86 (DIGITAL TITLER) SCHEMATIC DIAGRAM

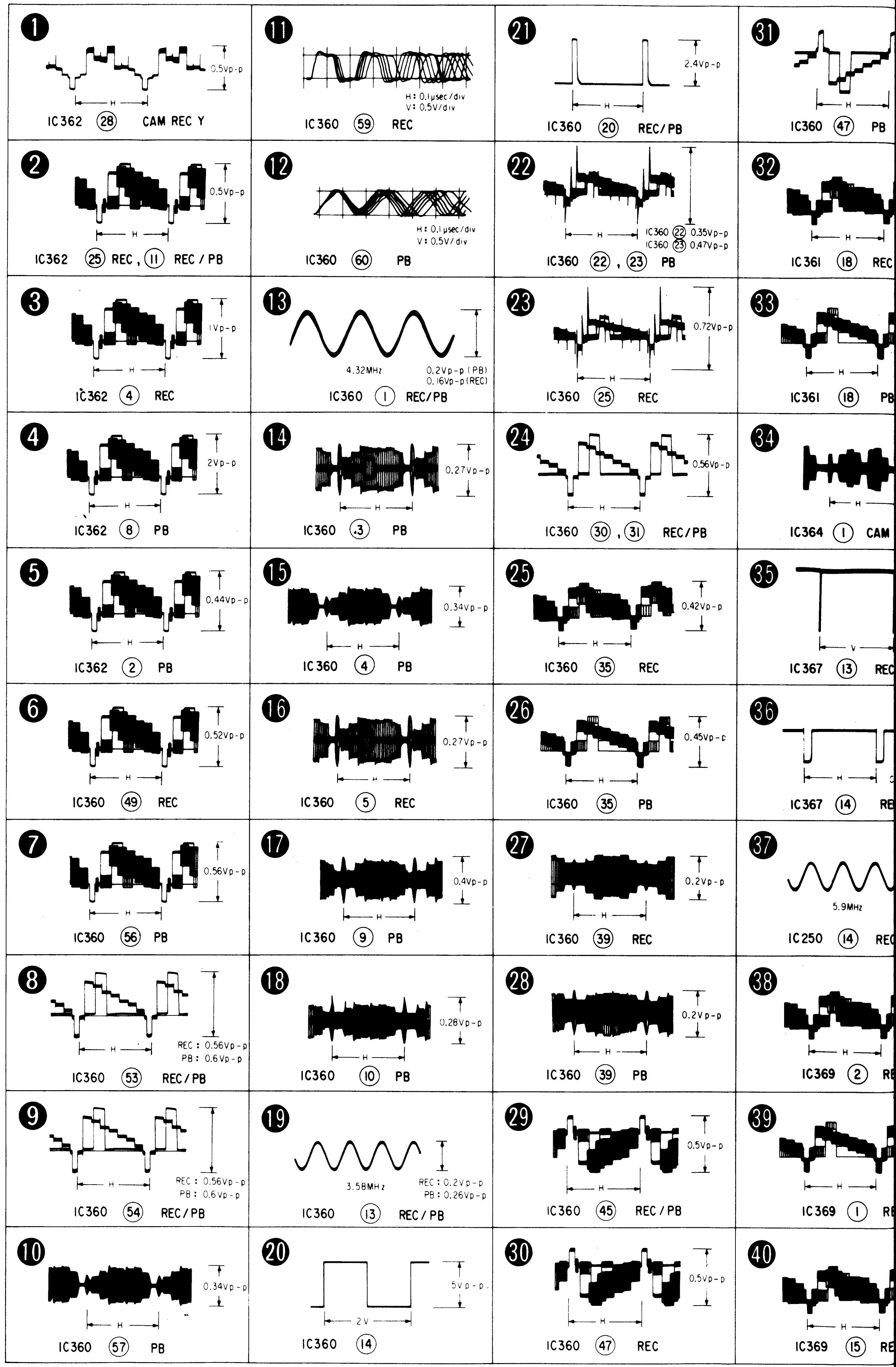
– Ref. No. SS-86 BOARD: 2,000 series –

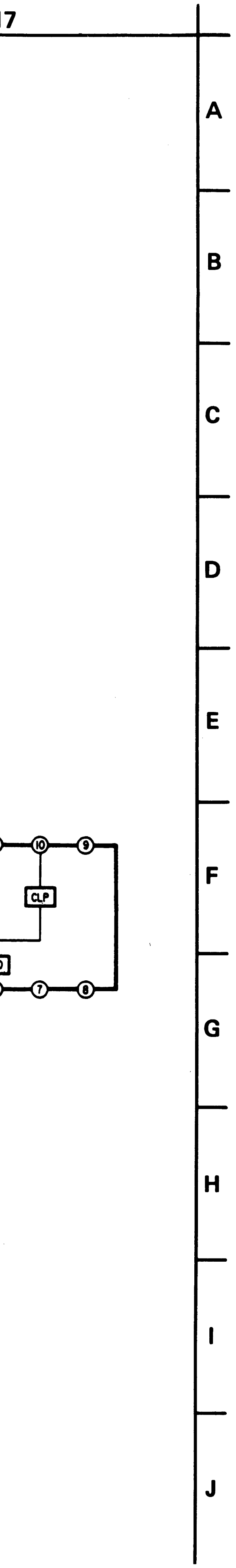

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
SS-86 BOARD (1/3)
IC201 CXK58256MF-12LL
IC201
TITLE MEMORY
Q203
INVERTER
Q203 2SC4396
R231 100k
C017 0.1
C205 0.047
C204 10 16V
L201 6.7µH
C218 CH
R202 22k
L204 18µH
C209 0.01
R203 4.7k
R230 100k
CT200 30p
D203 1T33C
C216 0.01 50V
C210 0.001
R204 10k
R205 10k
R229 0
R025 0
PLL ERROR VOLTAGE
L202 4.7µH
C206 10 16V
C207 0.047
IC202
GATE ARRAY
IC202 MB670493
C202 0.1
YDL0
YDL1
YDL2
WPS1
WPS2
RPS1
RPS2
NT/PAL
OSCI
GND
OSCO
PDUP
XPP IN
CG MK
CG IN
CG BK
YRO
YGO
YBO
Y BLK
HD
VD
Vss
CRO
CGO
CBO
C BLK
SHFT IN
SI
CLK
STB
SVSY
R207 2200
R208 1k
R209 2200
R210 0
R211 0
R206 0
A BACK LIGHT
B VD
C HD
D TB
E TG
F TR
G C BLK
H GND
I TY
J Y BLK
K A/D Y
TO SS-86
(SYSTEM
(See pa
IC203
A-D CONVERTER
IC203 µPC31162
Q201, 202
SYNC-TIP CLAMP
A-D CONVERTER REFERENCE LEVEL
L203 4.7µH
C212 10 16V
C211 0.047
R212 2.2k
R214 3300
R215 3300
RV200 1k
R213 560
R216 3900
R217 47k
C215 0.47 10V TA
Q201 2SA1576
Q202 2SC4081
C213 22 6.3V
C217 0.1
AUTO/MANU
CLK
DATA TO MSTR
CS
DATA TO SLVE
SLVE RESET
VDD
SS C 5V
AF ON
TALLY
SS GND
T1 INPOSE
T2 INPOSE
MEMO
COLOR
EVER 5V
LINCS POWER
UNREG GND
TELE
WIDE
TO SS-86 BOARD (1/3) (SYSTEM CONTROL)
(See page 115.)
TO SS-86 BOARD (1/3) (SYSTEM CONTROL)
(See page 115.)
IC200
DT CONTROL
IC200 µPD7507HG
NC
M35/M34
TELE IN
WIDE IN
AF ON
BACK LIGHT
TELE OUT
WIDE OUT
MEMO
T1 IN
TALLY
Vss
TITLE CS
RAMCS
T. SO
T. SCK
LO
ED/NL
NC
AUTO/MANU
LI
DATA TO SLVE
DATA TO MSTR
COLOR
T2 IN
SLVE RESET
CL1
VDD
CL2
CS
CLK
R236 680
R237 47k
R238 47k
R240 47k
R241 47k
R243 47k
R244 47k
R234 47k
R028 10k
R029 10k
R246 4.7k
R245 4.7k
R249 47k
R247 4.7k
R248 4.7k
R038 47k
D201 MA159
R026 10k
R027 10k
Q206
INVERTER
R242 47k
Q206 2SC4396
L200 4.7µH
C200 10 16V
C201 0.047
R200 1M
X200
4MHz
R233 47k
R201 4700
Q205 2SC4396
D200 1S2835
Q204 2SC4396
Q205, Q204
INVERTER
CAMERA REC mode
IC101 CXA11
PULSE SHA
SS-86 BOARD
IC200 ⑯
4MHz
IC202 ㊸
IC202 ㊹


13
14
15
16
17
A
B
C
D
E
F
G
H
I
J
A' BACK LIGHT
B' VD
C' HD
D' TB
E' TG
F' TR
G' C BLK
H' GND
I' TY
J' Y BLK
K' A/D Y
TO SS-86 BOARD (1/3) (SYSTEM CONTROL)
(See page 115.)
R206 0
Q201,202 SYNC-TIP CLAMP
A-D CONVERTER REFERENCE LEVEL
R214 3300
R215 3300
5.1
Q202 2SC4081
Q201 2SA1576
RV200 1k
2.8
2.9
2.3
R213 560
R216 3900
R217 47k
C215 0.47 10V
C213 22 6.3V
CAMERA REC mode
IC101 CXA1157A
CLP
PULSE SHAPER
PED
SS-86 BOARD
❶ 3.6Vp-p 4MHz IC200 ⑯
❷ 4Vp-p V IC202 (43)
❸ 5Vp-p H IC202 (44)

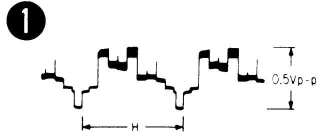
DIGITAL TITLER VIDEO, AUDIO

VA-41 BOARD

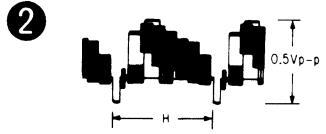




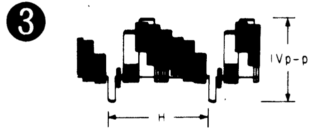
VA-41 BOARD

1


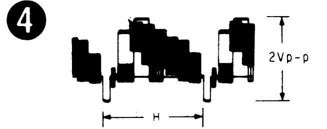
IC362 ㉘ CAM REC Y

2


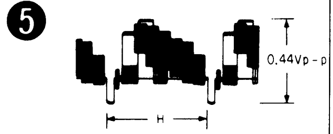
IC362 ㉕ REC , ⑪ REC / PB

3


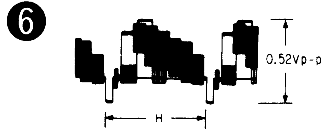
IC362 ④ REC

4


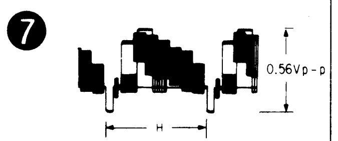
IC362 ⑧ PB

5


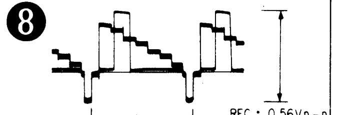
IC362 ② PB

6


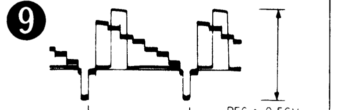
IC360 ㊾ REC

7


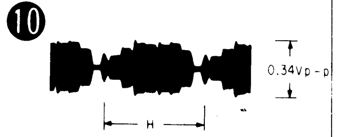
IC360 (56) PB

8


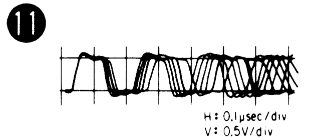
REC : 0.56Vp-p
PB : 0.6Vp-p
IC360 (53) REC / PB

9


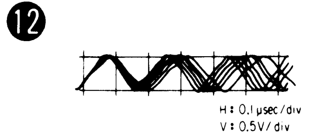
REC : 0.56Vp-p
PB : 0.6Vp-p
IC360 (54) REC / PB

10


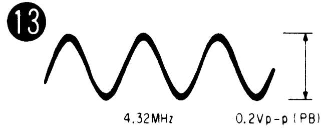
IC360 (57) PB

11


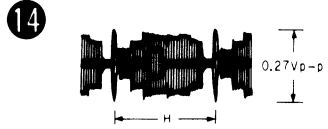
IC360 (59) REC

12


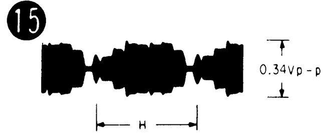
IC360 (60) PB

13


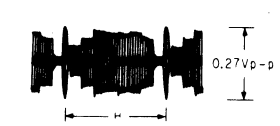
0.2Vp-p (PB)
0.16Vp-p (REC)
IC360 ① REC/PB

14


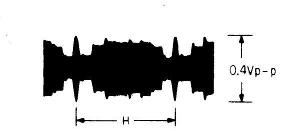
IC360 ③ PB

15


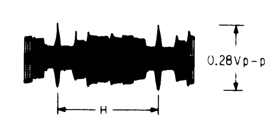
IC360 ④ PB

16


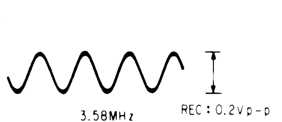
IC360 ⑤ REC

17


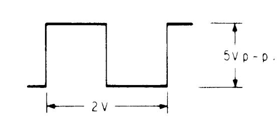
IC360 ⑨ PB

18


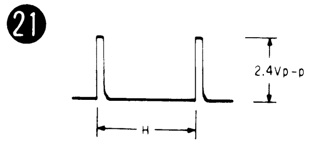
IC360 ⑩ PB

19


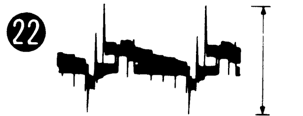
REC : 0.2Vp-p
PB : 0.26Vp-p
IC360 ⑬ REC / PB

20


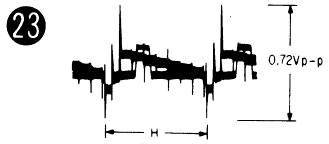
IC360 ⑭

21


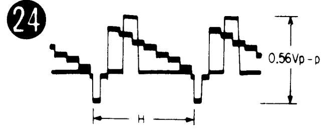
IC360 ⑳ REC/PB

22


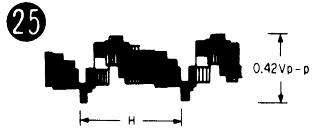
IC360 ㉒ 0.35Vp-p
IC360 ㉓ 0.47Vp-p
IC360 ㉒ , ㉓ PB

23


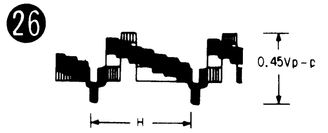
IC360 ㉕ REC

24


IC360 ㉚ , ㉛ REC/PB

25


IC360 ㉟ REC

26


IC360 ㉟ PB

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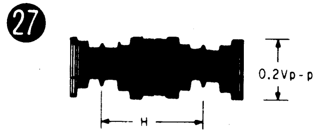
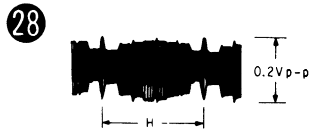
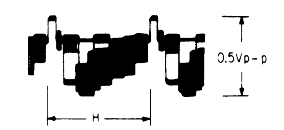


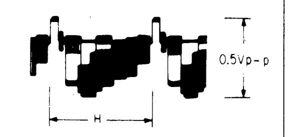
IC360 ㊴ REC

28


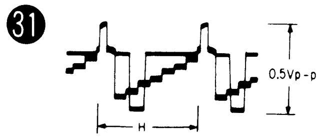
IC360 ㊴ PB

29


IC360 ㊺ REC / PB

30


IC360 ㊼ REC

31


IC360 ㊼ PB

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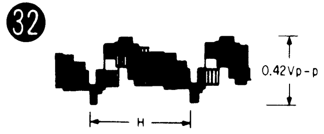

IC361 ⑱ REC

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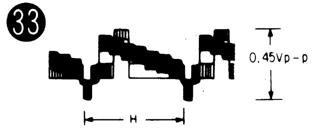
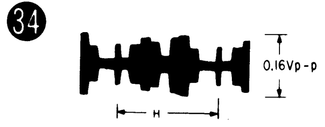
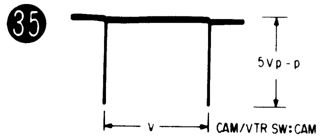


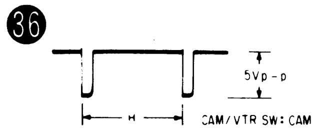
IC361 ⑱ PB

34


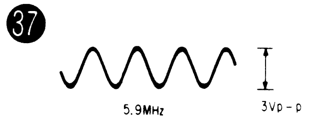
IC364 ① CAM REC C

35


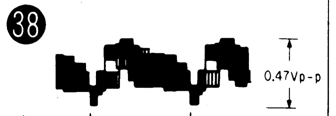
IC367 ⑬ REC / PB

36


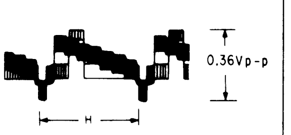
IC367 ⑭ REC/PB

37


IC250 ⑭ REC / PB

38


IC369 ② REC

39


IC369 ① REC

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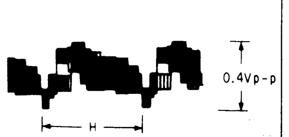
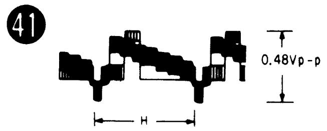
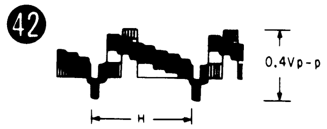


IC369 ⑮ REC , PB

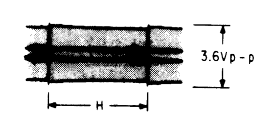
41


IC369 ② PB

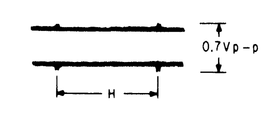
42


IC369 ① PB

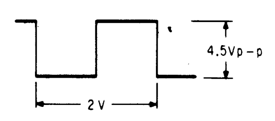
SS-86 BOARD

43


IC301 ㉘ , ㉝ REC

44


IC301 ⑯ PB

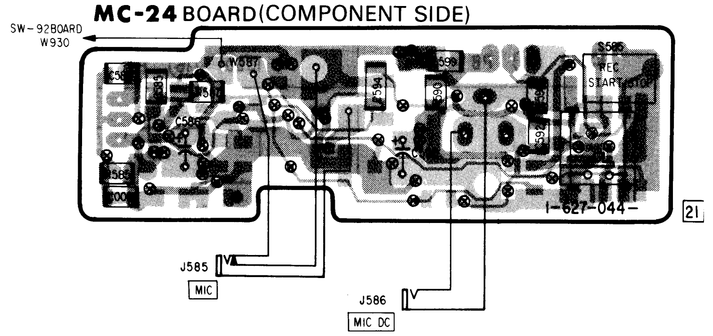
45


IC301 ㊴ REC/PB

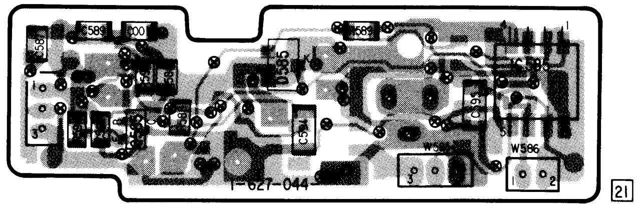
SS-86 (REC/PB AMP), VA-41 (VIDEO/AUDIO SIGNAL PROCESS), MC-24 (MIC AMP, START/STOP SWITCH) PRINTED WIRING BOARDS

– Ref. No. SS-86, MC-24 BOARDS: 2,000 series, VA-41 BOARD: 3,000 series –

MC-24 BOARD(COMPONENT SIDE)



MC-24 BOARD(CONDUCTOR SIDE)



Note:

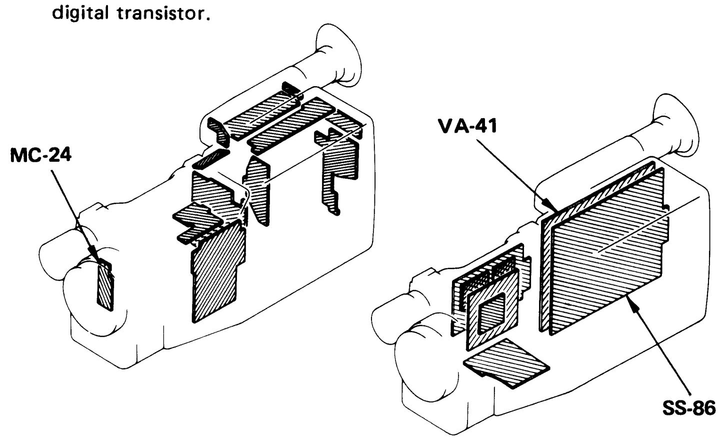
- ⊗ : Through hole.
- ▨ : Pattern of the rear side.

Caution:

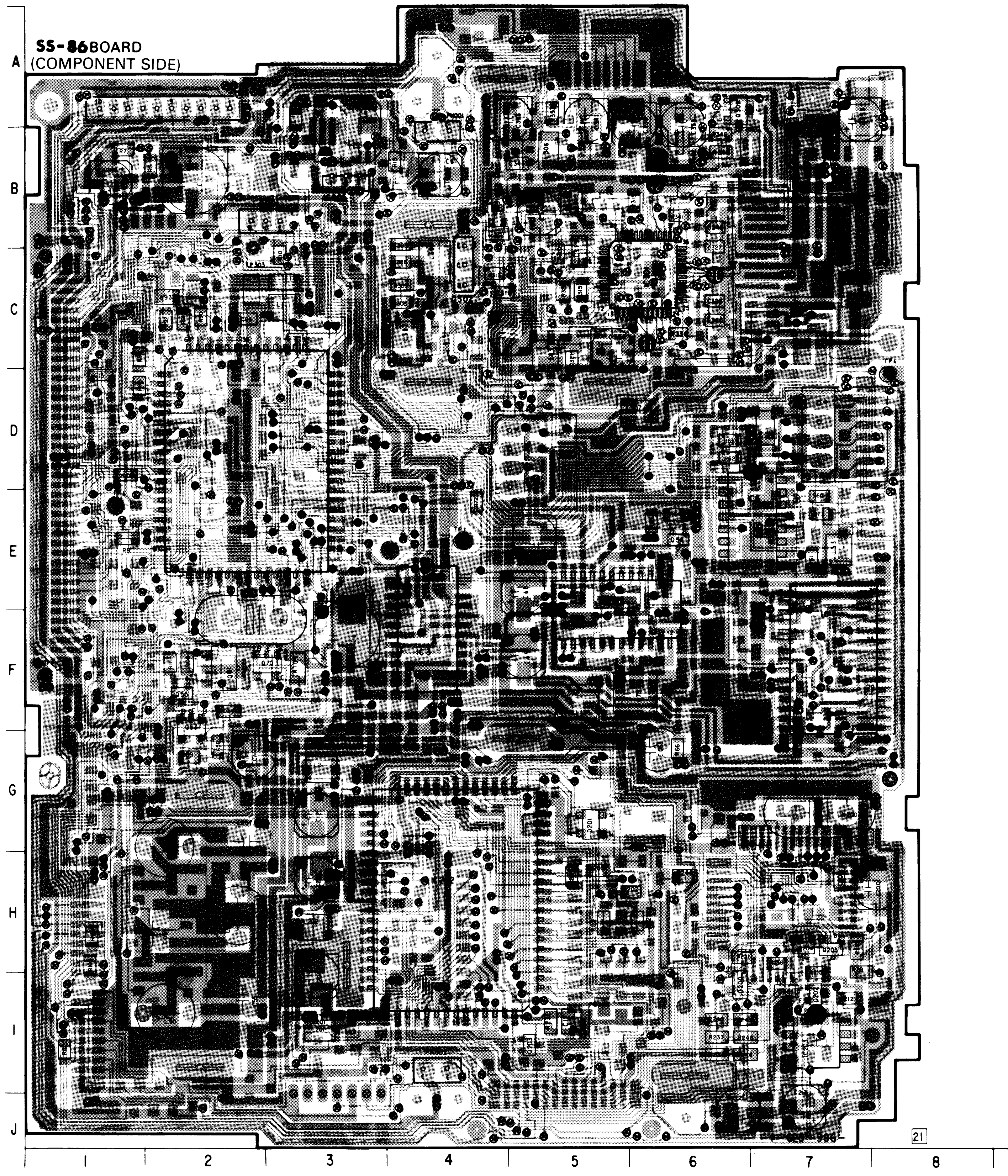
Pattern face side: (Conductor Side) Parts on the pattern face side seen from the pattern face are indicated.

Parts face side: (Component Side) Parts on the parts face side seen from the parts face are indicated.

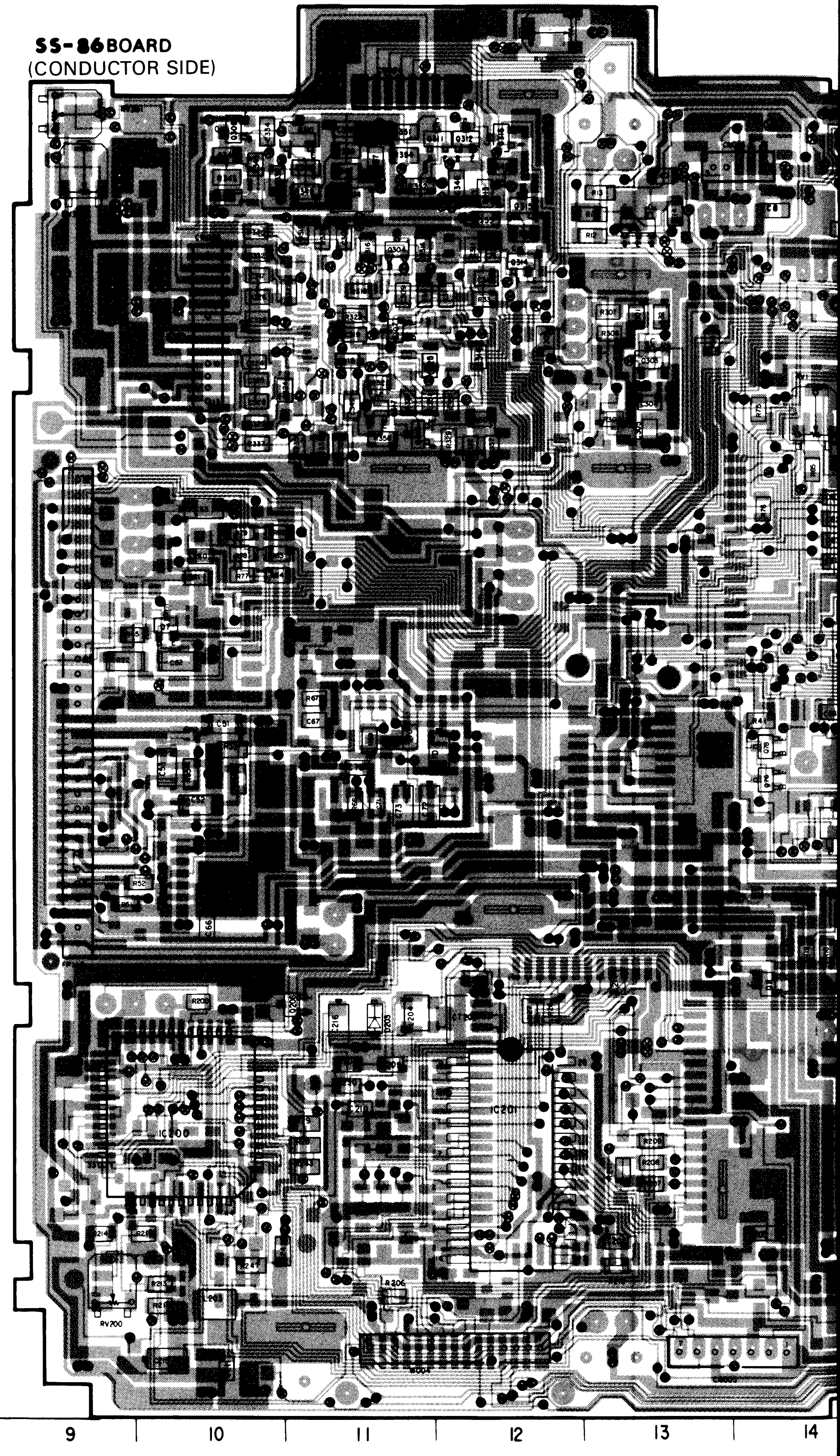
- Digital transistor (SS-86: Q304, Q305, Q307, Q308, Q314, Q315, Q316, Q319, Q321, VA-41: Q254, Q378, Q382, Q395, Q396, Q397, Q398, Q405, Q407, Q413, Q416, Q417, Q418, Q420, Q424) is transistor with resistor.
  Refer to the SS-86, VA-41 boards schematic diagram for digital transistor.



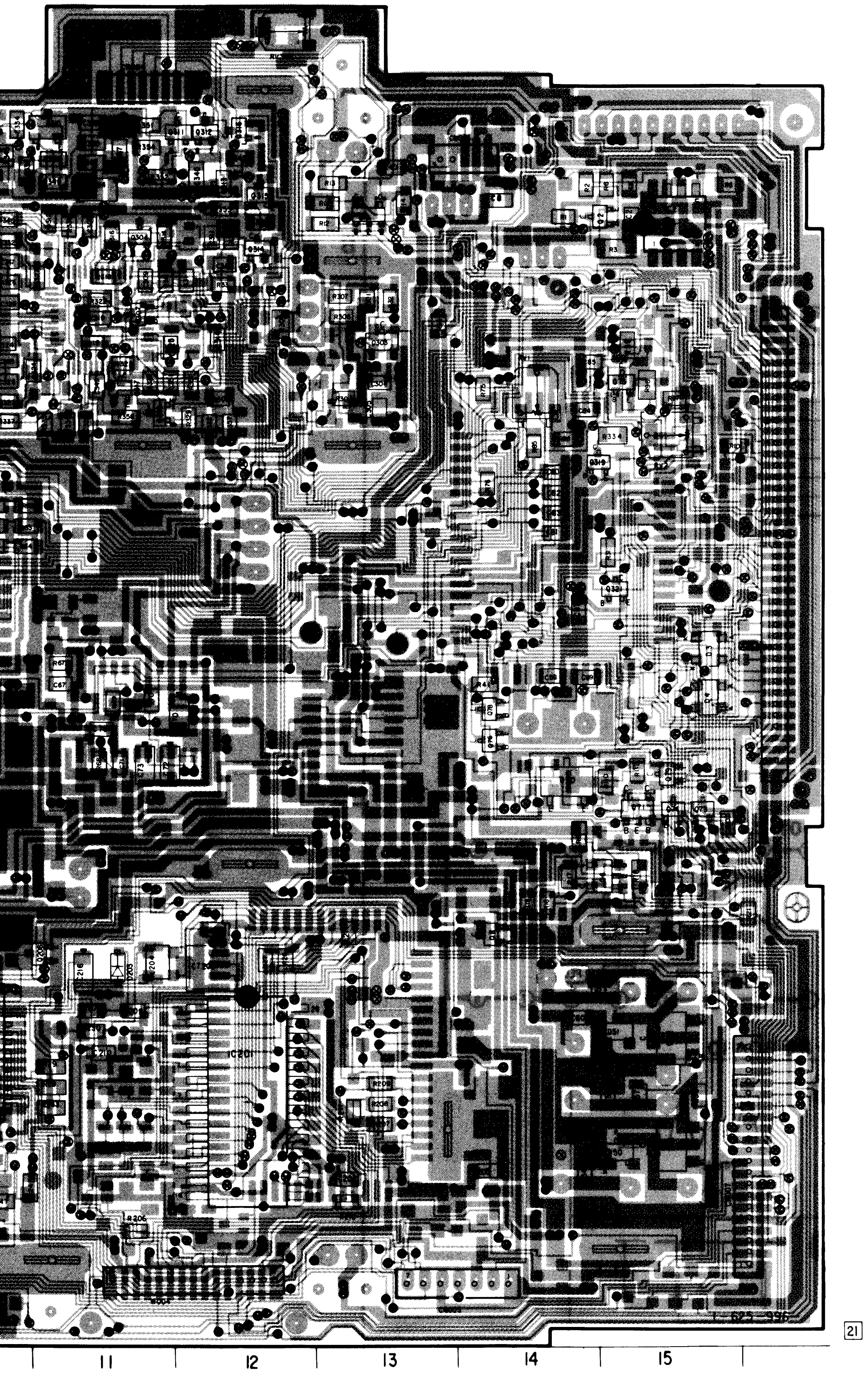
SS-86 BOARD (COMPONENT SIDE)



SS-86 BOARD (CONDUCTOR SIDE)



CN001	D·5
CN002	D·7
CN003	C·1 0
CN004	A·1 1
CN005	I ·5
CN006	B·1 4
CN007	H·16
D001	I ·14
D003	E·15
D004	F·15
D007	E·10
D008	I ·14
D050	H·15
D051	H·14
D200	H·6
D201	G·5
D203	D·11
IC001	D·2
IC002	B·15
IC003	F·4
IC004	F·5
IC005	B·3
IC006	E·6
IC007	F·7
IC200	H·10
IC201	H·12
IC202	G·4
IC203	I ·7
IC301	C·6
Q001	B·2
Q002	B·14
Q005	B·13
Q006	G·14
Q007	E·10
Q008	G·14
Q051	H·15
Q052	H·15
Q053	G·2
Q054	E·6
Q055	F·2
Q070	F·3
Q071	F·15
Q073	F·15
Q074	F·15
Q076	F·14
Q078	F·14
Q079	F·15
Q080	F·14
Q081	F·2
Q201	H·7
Q202	I ·7
Q203	I ·5
Q204	H·7
Q205	H·7
Q206	G·10
Q302	C·4
Q303	C·13
Q304	C·11
Q305	B·5
Q307	C·11
Q317	C·11
Q318	D·11
Q319	D·15

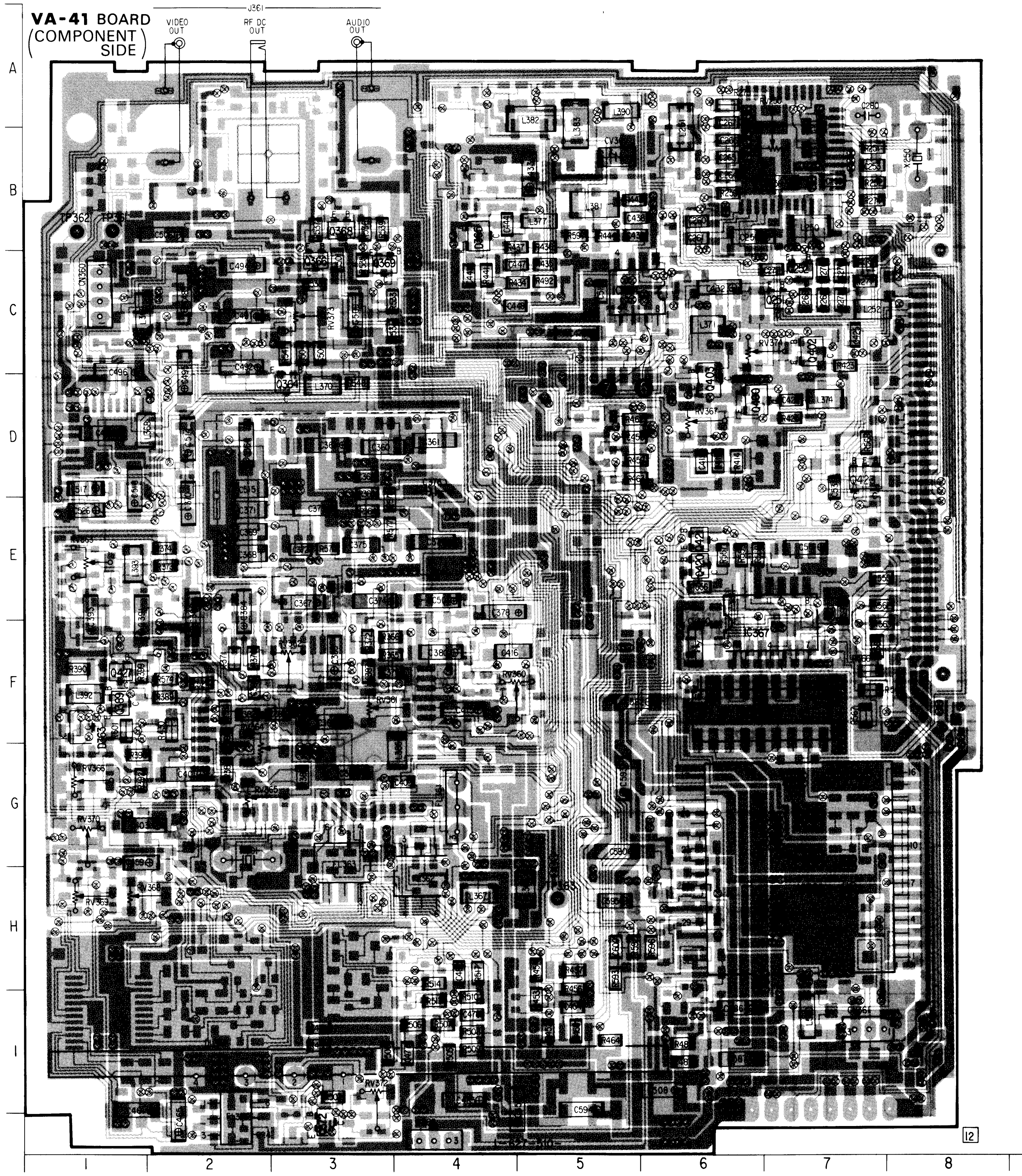


B·3
E·6
F·7
H·10
H·12
G·4
I·7
C·6

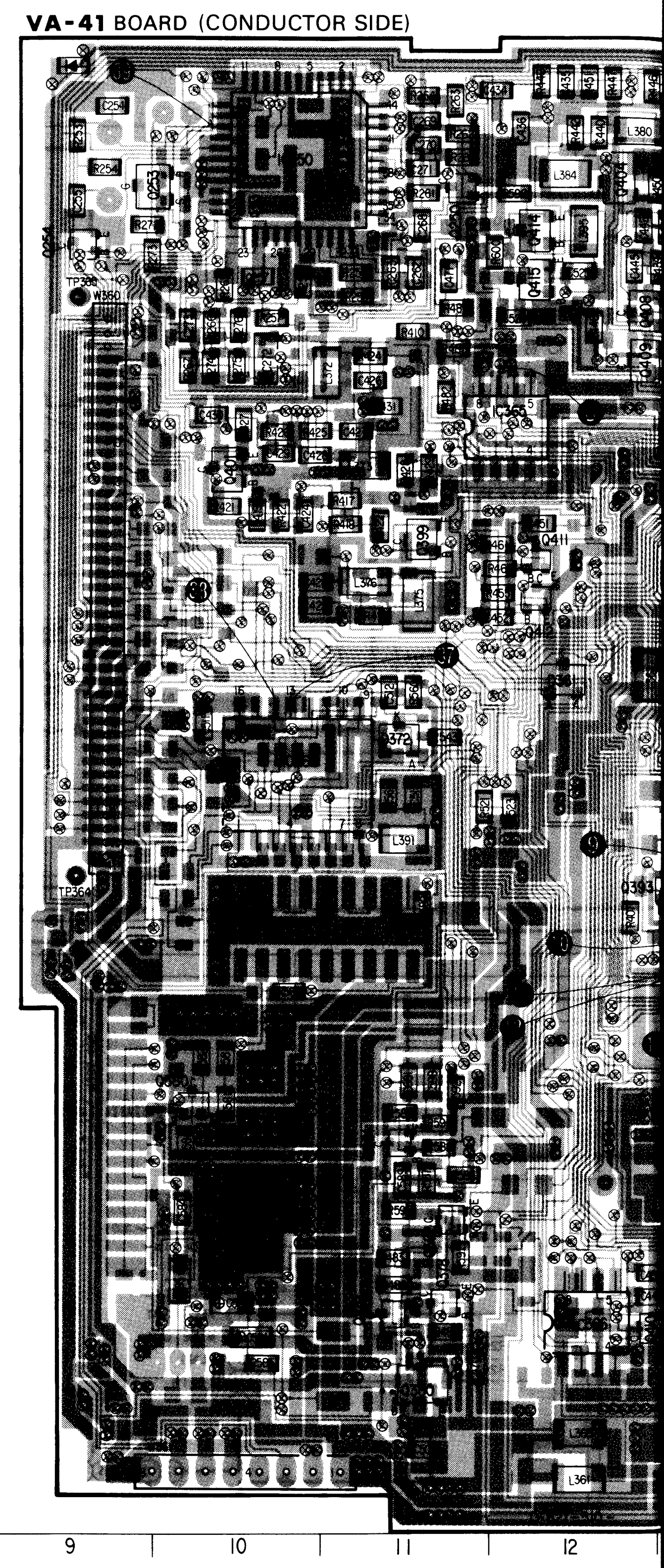
B·2
B·14

Q005	B·13
Q006	G·14
Q007	E·10
Q008	G·14
Q051	H·15
Q052	H·15
Q053	G·2
Q054	E·6
Q055	F·2
Q070	F·3
Q071	F·15
Q073	F·15
Q074	F·15
Q076	F·14
Q078	F·14
Q079	F·15
Q080	F·14
Q081	F·2
Q201	H·7
Q202	I·7
Q203	I·5
Q204	H·7
Q205	H·7
Q206	G·10
Q302	C·4
Q303	C·13
Q304	C·11
Q305	B·5
Q307	C·11
Q317	C·11
Q318	D·11
Q319	D·15
Q320	C·5
Q321	E·15
RV001	C·14
RV002	D·15
RV200	I·9
RV301	A·9
RV302	B·9
RV306	A·12
TP001	C·1
TP002	F·1
TP003	G·8
TP004	D·8
TP006	E·1
TP007	E·4
TP303	C·23

VA-41 BOARD (COMPONENT SIDE)

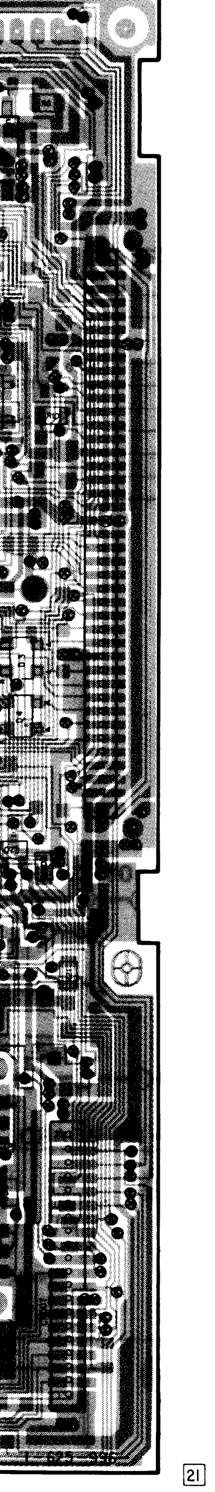


VA-41 BOARD (CONDUCTOR SIDE)

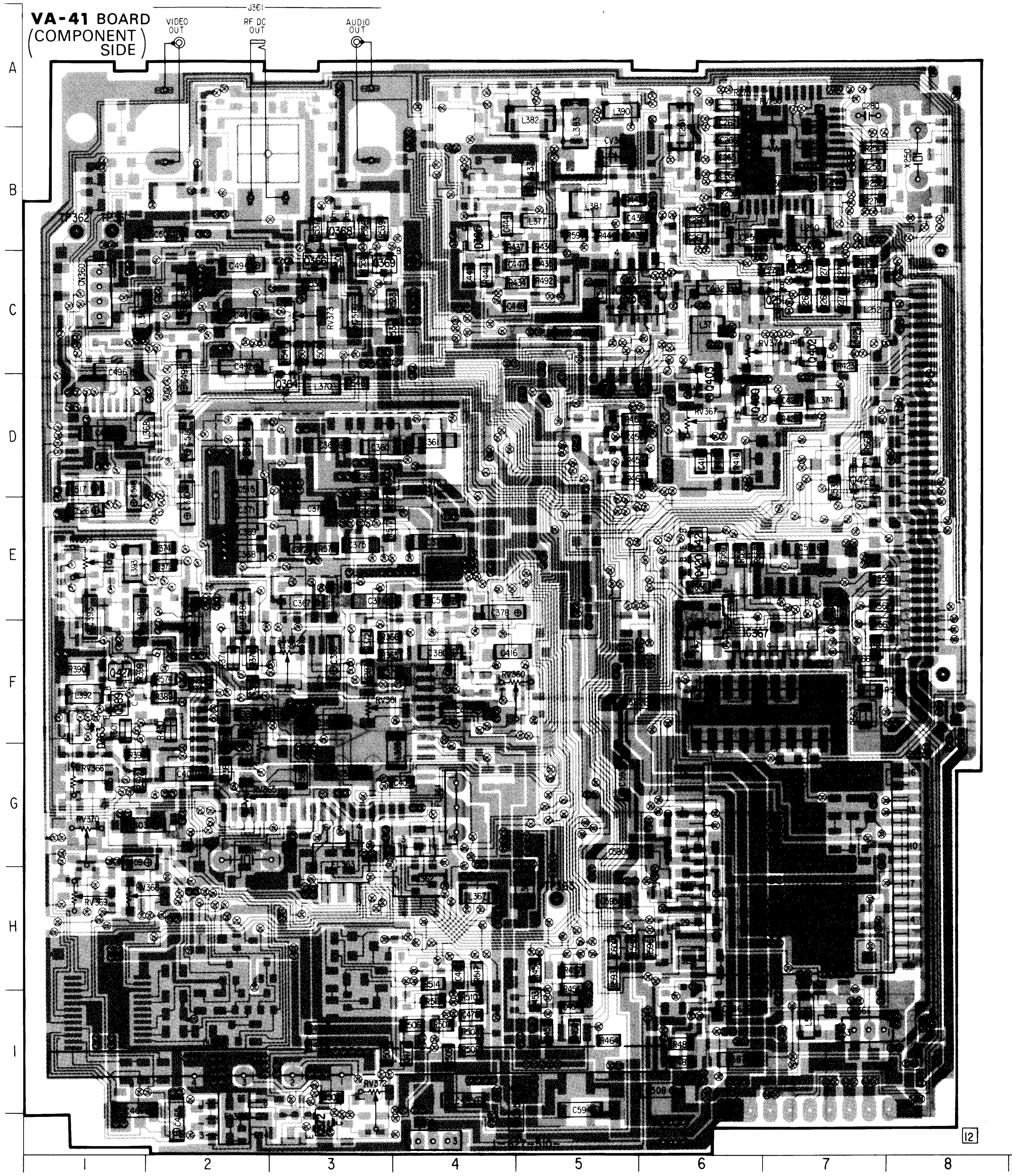


CN360	C·1
CN361	I·7
CV360	E·6
CV361	B·5
D361	E·12
D362	H·14
D363	F·1
D364	H·15
D365	B·4
D366	B·16
D367	A·16
D368	B·15
D369	B·14
D370	B·14
D372	E·11
D400	A·9
IC250	B·10
IC360	F·14
IC361	D·14
IC362	D·16
IC363	H·16
IC364	B·5
IC365	C·11
IC366	H·12
IC367	F·7
IC368	E·10
IC580	G·7
Q250	B·11
Q251	C·7
Q252	C·7
Q253	B·10
Q254	B·9
Q361	B·15
Q362	A·14
Q363	A·15
Q364	D·3
Q365	C·16
Q366	C·3
Q367	B·14
Q368	C·3
Q369	C·3
Q370	I·15
Q371	I·14
Q372	I·3
Q373	H·13
Q374	H·13
Q375	H·14
Q376	H·13
Q377	H·13
Q378	I·11
Q379	I·11
Q380	I·11
Q382	E·14
Q383	E·15
Q385	E·16
Q386	F·16
Q387	E·16
Q388	G·16
Q389	F·1
Q390	E·16
Q391	G·15
Q392	H·13
Q393	F·13
Q394	F·13
Q395	H·15
Q396	I·15
Q397	I·15
Q398	I·15
Q399	D·11
Q400	D·6
Q401	D·10
Q402	C·7
Q403	C·6
Q404	B·12
Q405	B·13
Q406	B·13
Q407	B·13
Q408	C·12
Q409	C·12
Q410	I·12

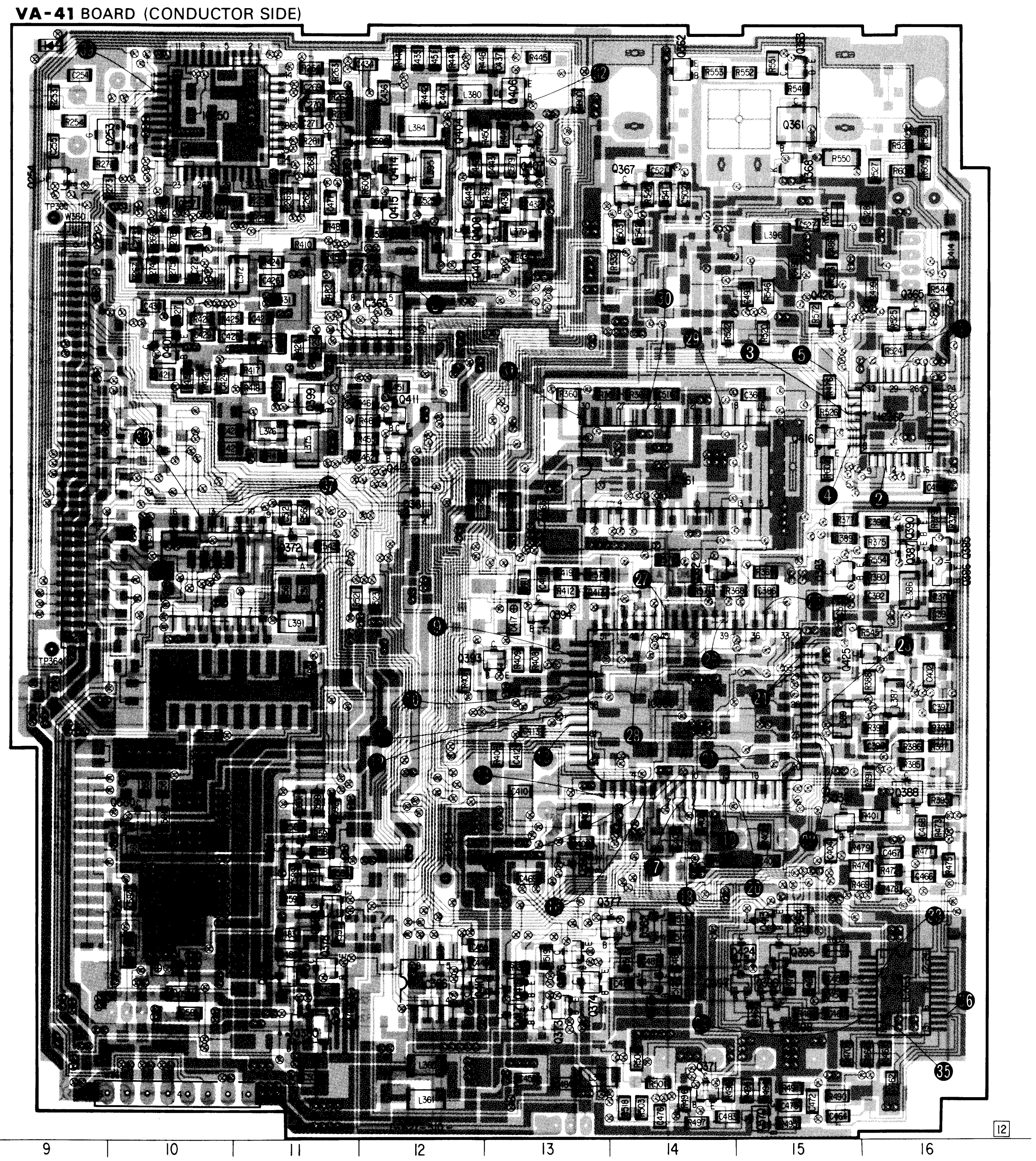
FOR TABLE OF WAVEFORMS, SEE PAGES 100 AND 101.



VA-41 BOARD (COMPONENT SIDE)



VA-41 BOARD (CONDUCTOR SIDE)

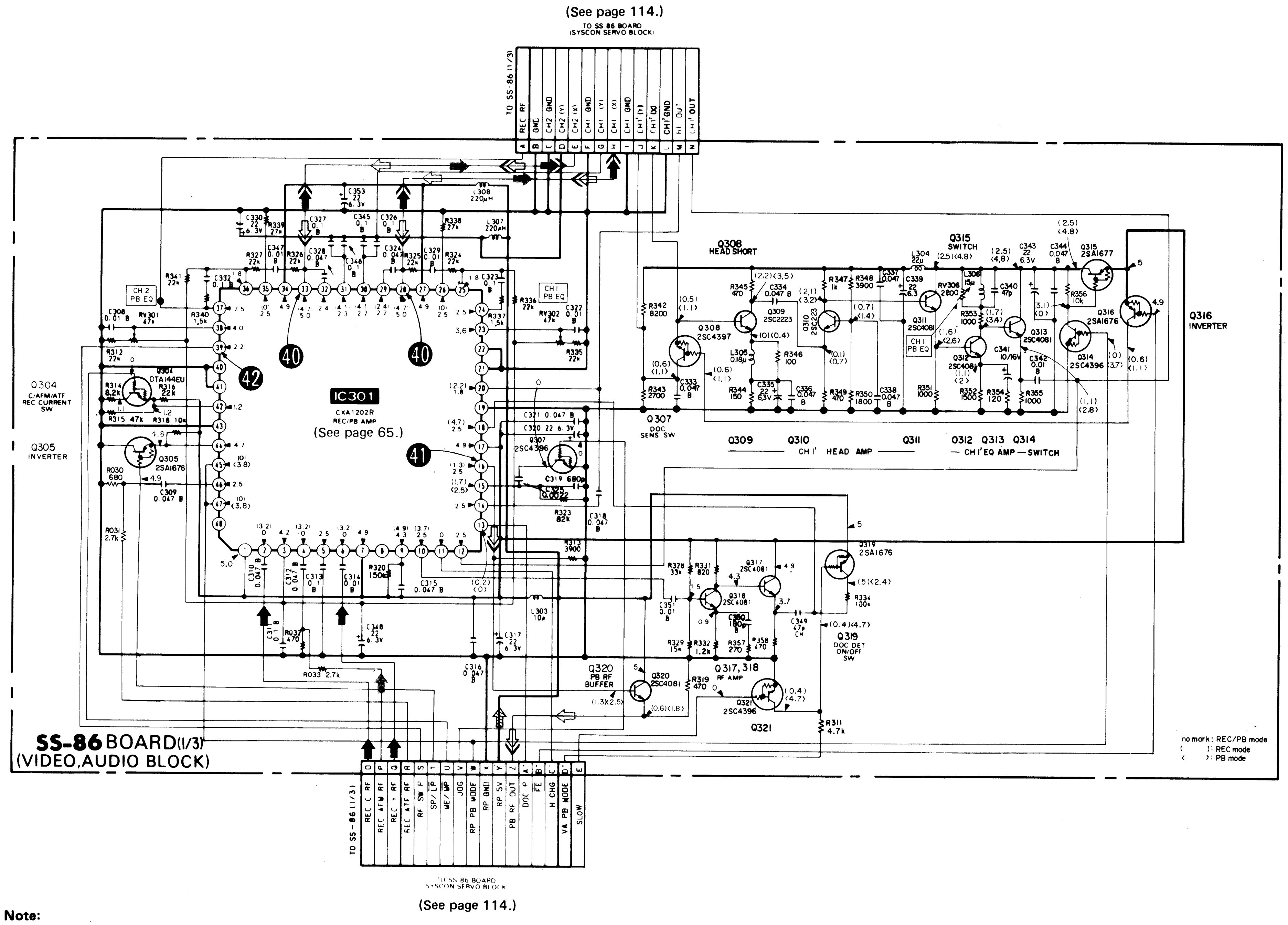


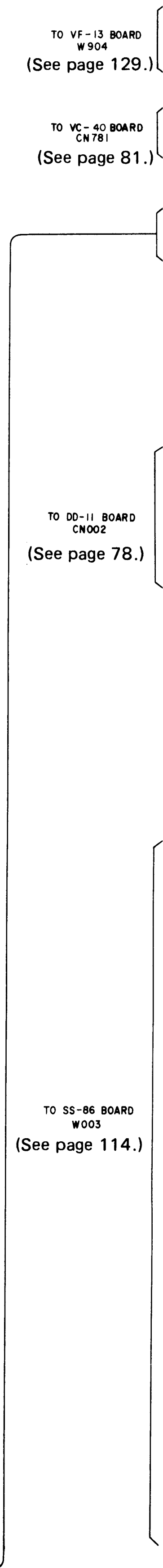
TP003	G-8
TP004	D-8
TP006	E · 1
TP007	E · 4
TP303	C-23

CN360	C · 1
CN361	I · 7
CV360	E · 6
CV361	B · 5
D361	E · 12
D362	H · 14
D363	F · 1
D364	H · 15
D365	B · 4
D366	B · 16
D367	A · 16
D368	B · 15
D369	B · 14
D370	B · 14
D372	E · 11
D400	A · 9
IC250	B · 10
IC360	F · 14
IC361	D · 14
IC362	D · 16
IC363	H · 16
IC364	B · 5
IC365	C · 11
IC366	H · 12
IC367	F · 7
IC368	E · 10
IC580	G · 7
Q250	B · 11
Q251	C · 7
Q252	C · 7
Q253	B · 10
Q254	B · 9
Q361	B · 15
Q362	A · 14
Q363	A · 15
Q364	D · 3
Q365	C · 16
Q366	C · 3
Q367	B · 14
Q368	C · 3
Q369	C · 3
Q370	I · 15
Q371	I · 14
Q372	I · 3
Q373	H · 13
Q374	H · 13
Q375	H · 14
Q376	H · 13
Q377	H · 13
Q378	I · 11
Q379	I · 11
Q380	I · 11
Q382	E · 14
Q383	E · 15
Q385	E · 16
Q386	F · 16
Q387	E · 16
Q388	G · 16
Q389	F · 1
Q390	E · 16
Q391	G · 15
Q392	H · 13
Q393	F · 13
Q394	F · 13
Q395	H · 15
Q396	I · 15
Q397	I · 15
Q398	I · 15
Q399	D · 11
Q400	D · 6
Q401	D · 10
Q402	C · 7
Q403	C · 6
Q404	B · 12
Q405	B · 13
Q406	B · 13
Q407	B · 13
Q408	C · 12
Q409	C · 12
Q410	I · 12
Q411	D · 12
Q412	D · 12
Q413	H · 15
Q414	B · 12
Q415	B · 12
Q416	D · 15
Q417	I · 13
Q418	I · 13
Q420	E · 6
Q421	E · 6
Q423	D · 7
Q424	H · 15
Q425	F · 15
Q426	C · 15
Q427	F · 1
Q580	G · 10
Q581	G · 11
Q582	H · 11
RV250	A · 7
RV360	F · 5
RV361	F · 3
RV362	E · 3
RV363	E · 1
RV364	G · 2
RV365	G · 2
RV366	G · 1
RV367	D · 6
RV368	H · 2
RV369	H · 1
RV370	G · 1
RV372	I · 3
RV374	D · 7
TP361	B · 1
TP362	B · 1
TP363	H · 5
TP364	F · 9
TP365	C · 9

SS-86 (REC/PB AMP), VA-41 (VIDEO/AUDIO SIGNAL PROCESS), MC-24 (MIC AMP, START/STOP SWITCH) SCHEMATIC DIAGRAM

– Ref. No. SS-86, MC-24 BOARDS: 2,000 series, VA-41 BOARD: 3,000 series –

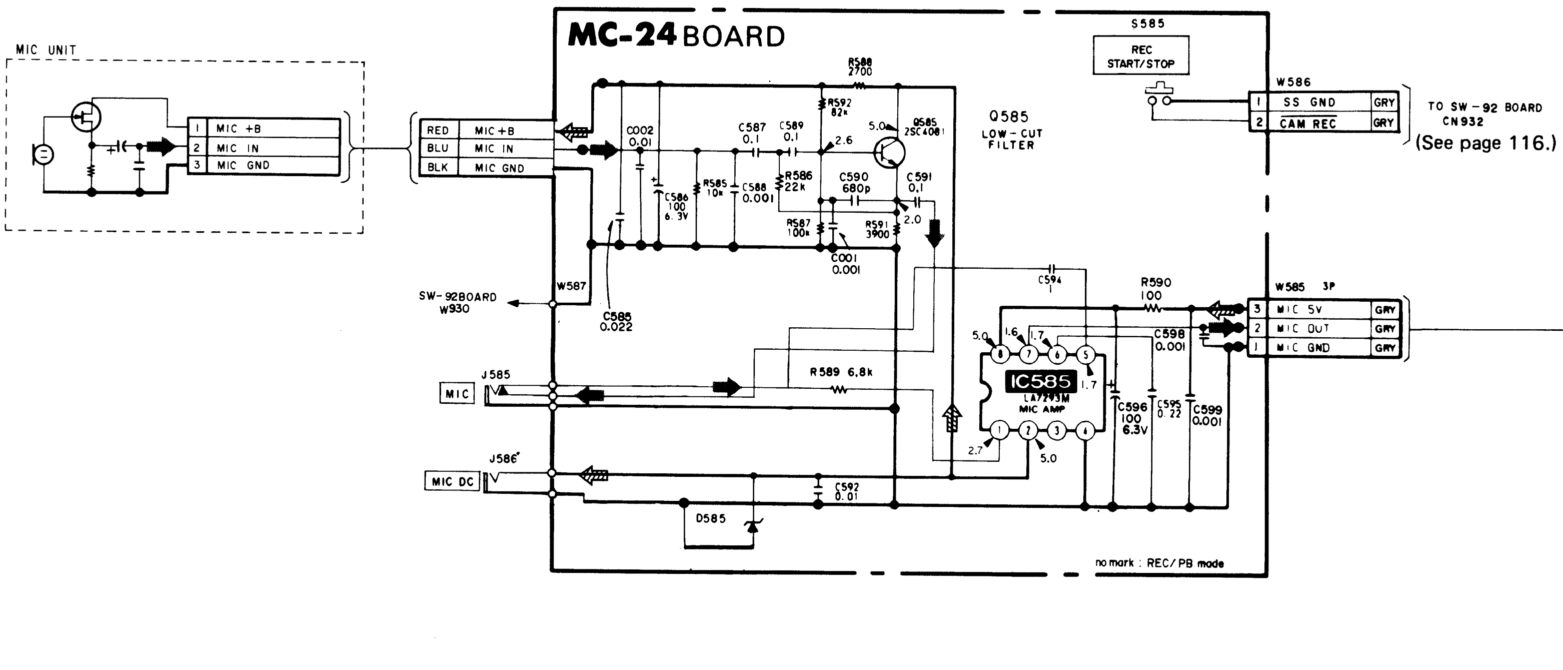

(See page 114.)
TO SS-86 BOARD (SYSCON SERVO BLOCK)
TO SS-86 (1/3)
REC RF
DMC
CH2 GND
CH2 (Y)
CH2 (X)
CH1 GND
CH1 (Y)
CH1 (X)
CH1 GND
CH1 (Y)
CH1 DD
CH1 GND
H.F. OUT
IC301
CXA1202R
REC/PB AMP
(See page 65.)
CH 2 PB EQ
CH1 PB EQ
Q304
C/AFM/ATF REC CURRENT SW
Q305
INVERTER
Q308
HEAD SHORT
Q315
SWITCH
Q316
INVERTER
Q307
DOC SENS SW
Q309 Q310 Q311 Q312 Q313 Q314
CH1' HEAD AMP — CH1' EQ AMP — SWITCH
Q319
DOC DET ON/OFF SW
Q320
PB RF BUFFER
Q317, 318
RF AMP
Q321
SS-86 BOARD(1/3)
(VIDEO,AUDIO BLOCK)
no mark : REC/PB mode
( ) : REC mode
< > : PB mode
TO SS-86 (1/3)
REC C RF
REC AFM RF
REC Y RF
REC ATF RF
RF SW P
SP/LP
ME/JOG
JOG
RP PB MODE
RP GND
RP 5V
PB RF OUT
DOC P
FE
H CHG
VA PB MODE
SLOW
TO SS-86 BOARD SYSCON SERVO BLOCK
(See page 114.)


TO VF-13 BOARD W904
(See page 129.)
TO VC-40 BOARD CN781
(See page 81.)
TO DD-11 BOARD CN002
(See page 78.)
TO SS-86 BOARD W003
(See page 114.)

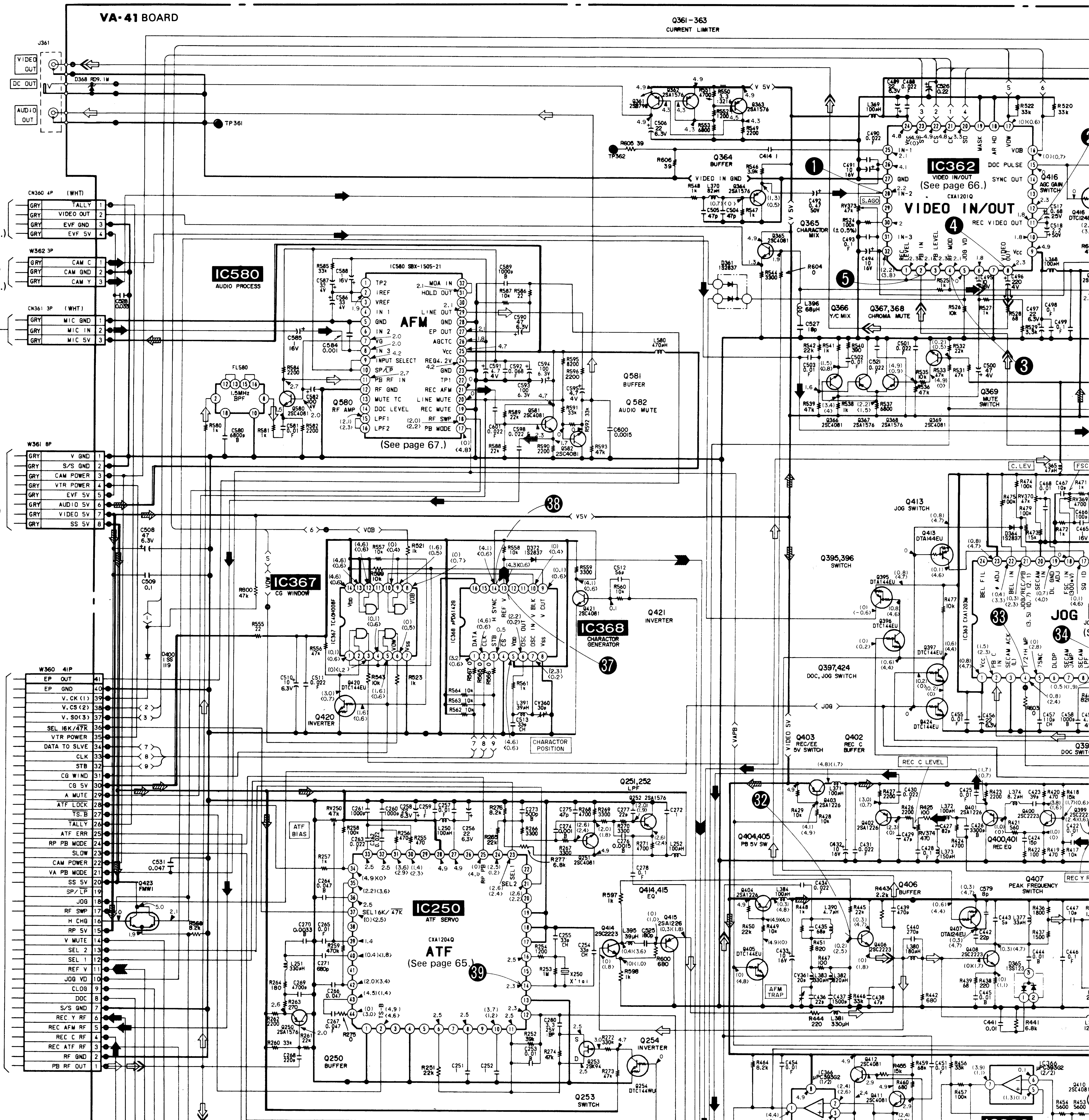
Note:

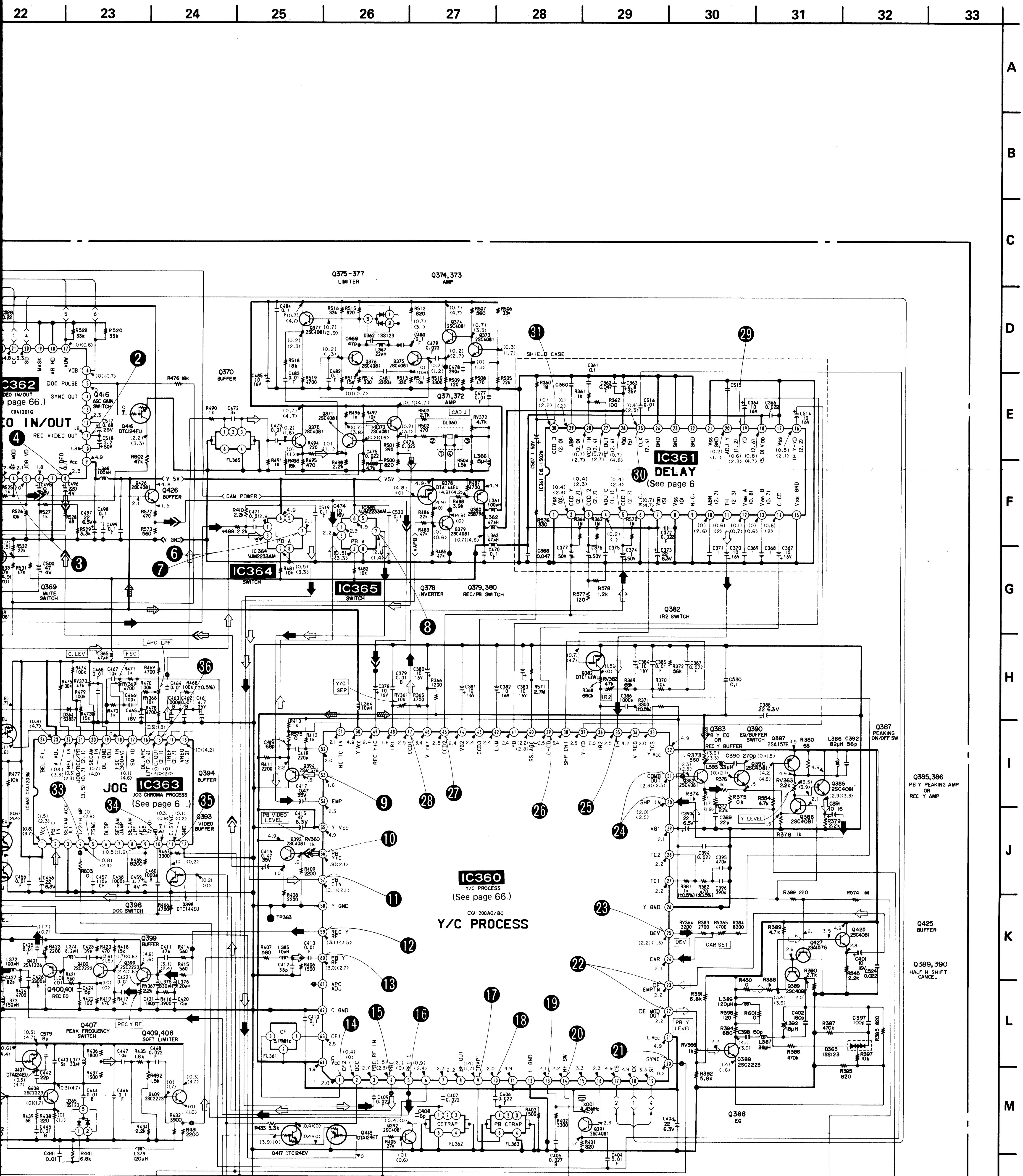
- Signal path
  - ➡ : REC Y Signal
  - ⇨ : PB Y Signal
  - ➡ : REC CHROMA Signal
  - ⇨ : PB CHROMA Signal
  - ➡ : REC Y/CHROMA Signal
  - ⇨ : PB Y/CHROMA Signal
  - ➡ : REC AUDIO Signal
  - ⇨ : PB AUDIO Signal

Ref. signal	➡


MIC UNIT
MIC +B
MIC IN
MIC GND
RED
BLU
BLK
MC-24 BOARD
S585
REC START/STOP
W586
SS GND
CAM REC
GRY
TO SW-92 BOARD CN932
(See page 116.)
Q585
LOW-CUT FILTER
SW-92 BOARD W930
W587
J585
MIC
J586
MIC DC
D585
IC585
LA7293M
MIC AMP
W585 3P
MIC 5V
MIC OUT
MIC GND
no mark : REC/PB mode

VIDEO/AUDIO VIDEO/AUDIO


VA-41 BOARD
J361
VIDEO OUT
DC OUT
AUDIO OUT
D368 RD9.1M
TP361
Q361-363
CURRENT LIMITER
Q362 2SA1576
Q361 2SB798
Q363 2SA1576
R551 4700
R550 3.3
R552 1200
R553 6800
R549 2200
C506 22 6.3V
V 5V
R605 39
TP362
R606 39
Q364 BUFFER
C414 1
VIDEO IN GND
R548 1k
L370 82μH
Q364 2SA1576
R546 3.9k
R547 1k
C505 47p
C504 47p
Q365 CHARACTOR MIX
Q365 2SC4081
D361 1S2837
R544 3300
R604 0
IC362
VIDEO IN/OUT
(See page 66.)
CXA1201Q
VIDEO IN/OUT
S.AGO
IN-1
IN-2
IN-3
GND
MASK
AR HD
JOG VD
VOB
DOC PULSE
SYNC OUT
REC VIDEO OUT
Vcc
Q416 AGC GAIN SWITCH
L369 100μH
R522 33k
R520 33k
C517 0.68 25V
C496 220 4V
L368 100μH
L396 68μH
C527 18p
Q366 Y/C MIX
Q367,368 CHROMA MUTE
Q369 MUTE SWITCH
Q366 2SC4081
Q367 2SA1576
Q368 2SA1576
Q369 2SC4081
CN360 4P (WHT)
GRY TALLY
GRY VIDEO OUT
GRY EVF GND
GRY EVF 5V
VF-13 BOARD W904
(See page 129.)
W362 3P
GRY CAM C
GRY CAM GND
GRY CAM Y
VC-40 BOARD CN781
(See page 81.)
CN361 3P (WHT)
GRY MIC GND
GRY MIC IN
GRY MIC 5V
IC580
AUDIO PROCESS
IC580 SBX-1505-21
AFM
TP2
IREF
VREF
IN 1
GND
IN 2
VG
IN 3
INPUT SELECT
SP/LP
PB RF IN
RF GND
MUTE TC
DOC LEVEL
LPF1
LPF2
MOA IN
HOLD OUT
LINE OUT
EP OUT
AGCTC
REG4.2V
TP1
REC AFM
LINE MUTE
REC MUTE
RF SWP
PB MODE
(See page 67.)
FL580
1.5MHz BPF
Q580 RF AMP
Q580 2SC4081
Q581 BUFFER
Q582 AUDIO MUTE
Q581 2SC4081
Q582 2SC4081
L580 470μH
C600 0.0015
W361 8P
GRY V GND
GRY S/S GND
GRY CAM POWER
GRY VTR POWER
GRY EVF 5V
GRY AUDIO 5V
GRY VIDEO 5V
GRY SS 5V
DD-11 BOARD CN002
(See page 78.)
V5V
VOB
IC367
CG WINDOW
IC367 TC4W008F
Q420 INVERTER
Q420 DTC144EU
IC368
CHARACTOR GENERATOR
IC368 μPD6142B
DATA
CLK
STB
CS
OSC IN
OSC OUT
H SYNC
REF V
BLK
V OUT
D372 1S2837
Q421 2SC4081
Q421 INVERTER
CHARACTOR POSITION
L391 39μH
CV360 30p
D400 1SS119
R800 47k
W360 41P
EP OUT
EP GND
V.CK(1)
V.CS(2)
V.SO(3)
SEL 16K/47K
VTR POWER
DATA TO SLVE
CLK
STB
CG WIND
CG 5V
A MUTE
ATF LOCK
TS.B
TALLY
ATF ERR
RP PB MODE
SLOW
CAM POWER
VA PB MODE
SS 5V
SP/LP
JOG
RF SWP
H CHG
RP 5V
V MUTE
SEL 2
SEL 1
REF V
JOG VD
CLOG
DOC
S/S GND
REC Y RF
REC AFM RF
REC C RF
REC ATF RF
RF GND
PB RF OUT
SS-86 BOARD W003
(See page 114.)
Q423 FMW1
ATF BIAS
IC250
ATF SERVO
CXA1204Q
ATF
(See page 65.)
SEL 16K/47K
SEL1
SEL2
Q250 BUFFER
Q250 2SA1576
Q251,252 LPF
Q252 2SA1576
Q251 2SC4081
Q253 SWITCH
Q253 2SK94
Q254 INVERTER
Q254 DTC144WU
X250 X'tal
Q414,415 EQ
Q414 2SC2223
Q415 2SA1226
Q413 JOG SWITCH
Q413 DTA144EU
Q395,396 SWITCH
Q395 DTA144EU
Q396 DTC144EU
Q397 DTC144EU
Q397,424 DOC, JOG SWITCH
Q424 DTC144EU
IC363 CXA1203M
JOG
BEL FIL
BEL IN
SECAM
FSC IN
C.LEV
Q403 REC/EE 5V SWITCH
Q402 REC C BUFFER
Q403 2SA1226
Q402 2SA1226
REC C LEVEL
Q404,405 PB 5V SW
Q400,401 REC EQ
Q400 2SC2223
Q401 2SA1226
Q399
Q407 PEAK FREQUENCY SWITCH
REC Y
Q404 2SA1226
Q405 DTC144EU
Q406 BUFFER
Q406 2SC2223
Q407 DTA124EU
Q408 2SC2223
D365 1SS123
AFM TRAP
Q411 2SC4081
Q412 2SC4081
IC366 μPC393G2 (1/2)
IC366 μPC393G2 (2/2)
IC366 V SYNC SEP
IC366 CLOG DETECT
Q411,412 CLOG DETECT
Q410 2SC4081
VAPB
VIDEO 5V
V 5V


22
23
24
25
26
27
28
29
30
31
32
33
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
IC362
VIDEO IN/OUT
(See page 66.)
CXA1201Q
Q416
AGC GAIN SWITCH
Q370
BUFFER
Q375-377
LIMITER
Q374,373
AMP
Q371,372
AMP
SHIELD CASE
IC361
DELAY
(See page 6
IC364
NJM2233AM
SWITCH
IC365
SWITCH
Q378
INVERTER
Q379,380
REC/PB SWITCH
Q382
IR2 SWITCH
Q369
MUTE SWITCH
Q426
BUFFER
CAM POWER
FL365
C.LEV
FSC
APC LPF
IC363
JOG
JOG CHROMA PROCESS
(See page 6 .)
Q394
BUFFER
Q393
VIDEO BUFFER
Q398
DOC SWITCH
Q399
BUFFER
Q400,401
REC EQ
Q407
PEAK FREQUENCY SWITCH
Q409,408
SOFT LIMITER
REC Y REF
Y/C SEP
PB VIDEO LEVEL
TP363
CF
3.58MHz
FL361
IC360
Y/C PROCESS
(See page 66.)
CXA1200AQ/BQ
Y/C PROCESS
CETRAP
FL362
PB CTRAP
FL363
Q417 DTC124EV
Q417,418
DOC SWITCH
Q392
TRAP FREQ SW
Q391
BUFFER
Q383
PB Y EQ OR REC Y BUFFER
Q390
EQ/BUFFER SWITCH
Q387
PEAKING ON/OFF SW
Q385,386
PB Y PEAKING AMP OR REC Y AMP
Y LEVEL
Q425
BUFFER
Q389,390
HALF H SHIFT CANCEL
DEV
CAR SET
PB Y LEVEL
Q388
EQ
IC366
V SYNC SEP
Q410
BUFFER
2
3
4
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
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23
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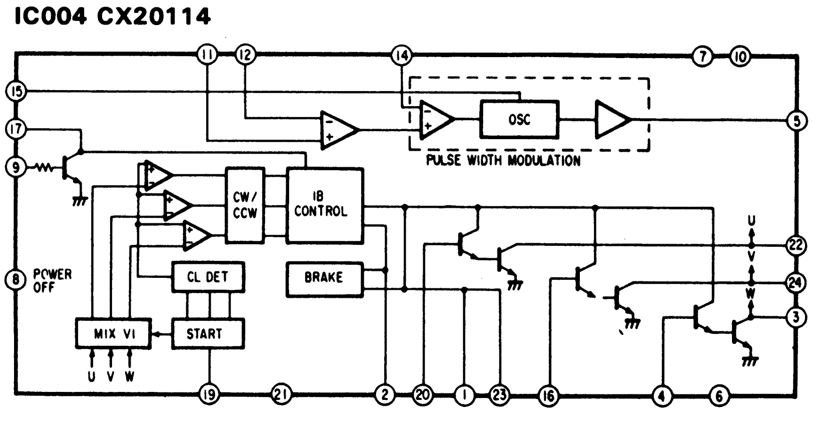
36

FOR IC BLOCK DIAGRAMS, SEE PAGES 65 TO 67.
FOR TABLE OF WAVEFORMS, SEE PAGES 100 AND 101.

SS-86 (SYSTEM CONTROL, SERVO), SW-92 (START/STOP, STANDBY SWITCH, INPUT/OUTPUT JACK), ZM-8 (ZOOM SWITCH), PA-13 (POWER), CC-7 (MODE SWITCH), FP-53 (

– Ref. No. SS-86 BOARD: 2,000 series, SW-92, ZM-8, PA-13, CC-7, FP-53 BOARDS: 4,000 series –

IC004 CX20114

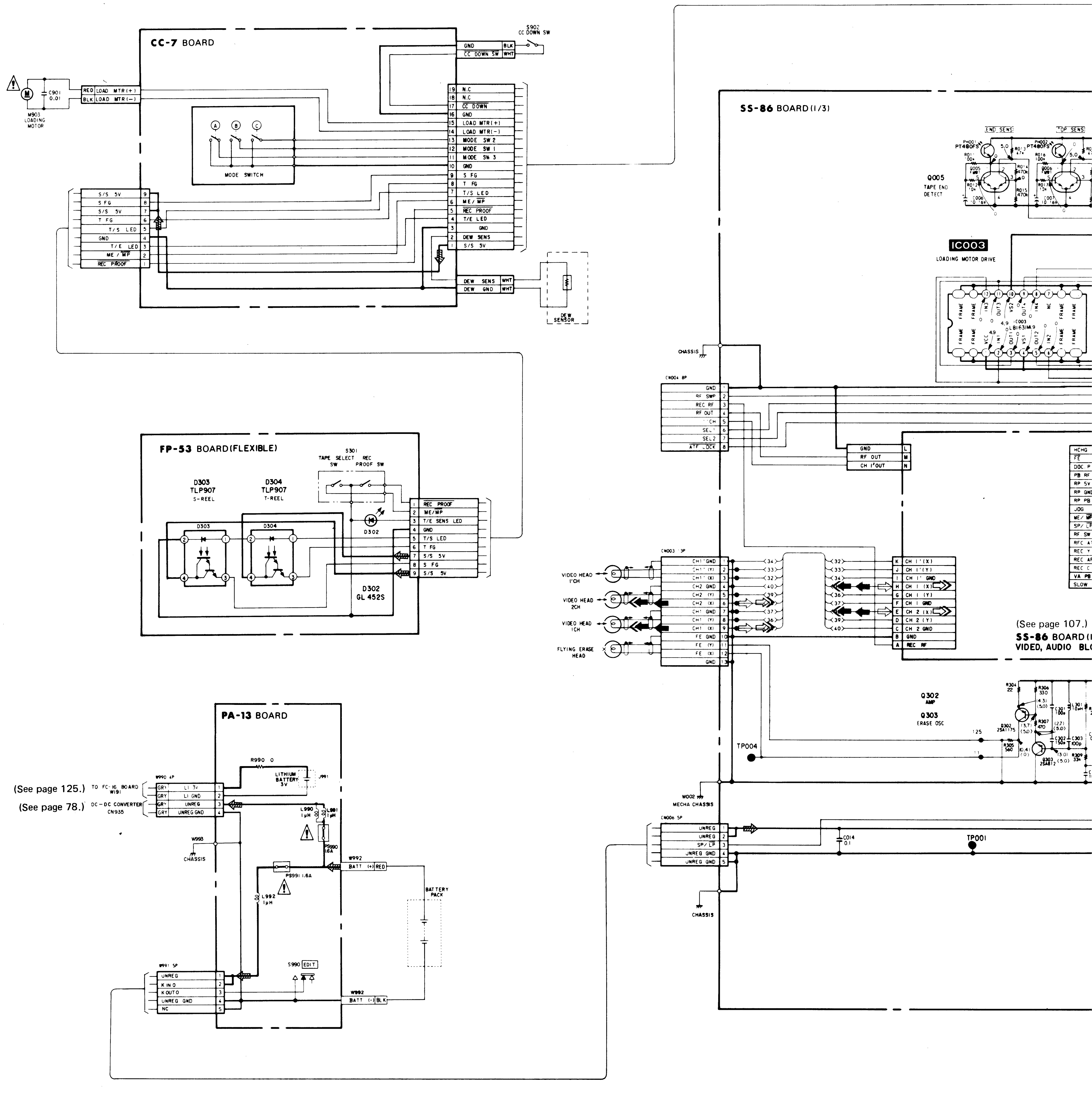


PULSE WIDTH MODULATION
OSC
CW/CCW
IB CONTROL
CL DET
BRAKE
START
MIX VI
U V W
POWER OFF
U
V
W

Note:

- Signal path
  - ➡ : REC Y Signal
  - ➡ : REC CHROMA Signal
  - ➡» : REC Y/CHROMA Signal
  - ⇨» : PB Y/CHROMA Signal
  - ➡ : REC AUDIO Signal
  - ⇨ : PB AUDIO Signal

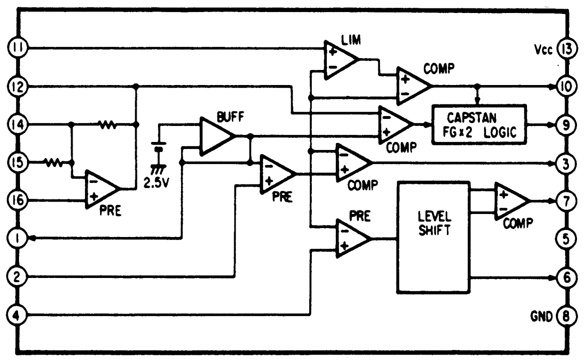
	REC	REC/PB	PB
Drum speed servo		➡	
Drum phase servo		➡»	
Drum servo (speed and phase)		➡»»	
Capstan speed servo		➡	
Capstan phase servo	➡»		⇨»
Capstan servo (speed and phase)		➡»»	
Ref. signal	➡	➡	⇨



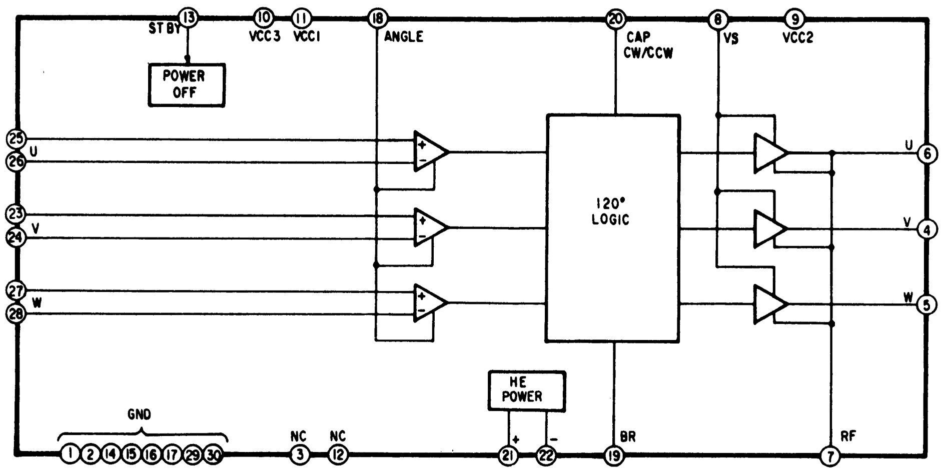
CC-7 BOARD
S902 CC DOWN SW
GND BLK
CC DOWN SW WHT
M903 LOADING MOTOR
C901 0.01
RED LOAD MTR(+)
BLK LOAD MTR(−)
MODE SWITCH
A B C
19 N.C
18 N.C
17 CC DOWN
16 GND
15 LOAD MTR(+)
14 LOAD MTR(−)
13 MODE SW 2
12 MODE SW 1
11 MODE SW 3
10 GND
9 S FG
8 T FG
7 T/S LED
6 ME/MP
5 REC PROOF
4 T/E LED
3 GND
2 DEW SENS
1 S/S 5V
S/S 5V 9
S FG 8
S/S 5V 7
T FG 6
T/S LED 5
GND 4
T/E LED 3
ME/MP 2
REC PROOF 1
DEW SENS WHT
DEW GND WHT
DEW SENSOR
FP-53 BOARD (FLEXIBLE)
S301 TAPE SELECT SW REC PROOF SW
D303 TLP907 S-REEL
D304 TLP907 T-REEL
D302
D302 GL452S
1 REC PROOF
2 ME/MP
3 T/E SENS LED
4 GND
5 T/S LED
6 T FG
7 S/S 5V
8 S FG
9 S/S 5V
PA-13 BOARD
(See page 125.) TO FC-16 BOARD W191
(See page 78.) DC-DC CONVERTER CN935
W990 4P
GRY LI 3V 1
GRY LI GND 2
GRY UNREG 3
GRY UNREG GND 4
R990 0
LITHIUM BATTERY 3V
J991
L990 1μH
L991 1μH
PS990 1.6A
W993 CHASSIS
W992 BATT (+) RED
PS991 1.6A
L992 1μH
BATTERY PACK
S990 EDIT
W991 5P
UNREG 1
K IN O 2
K OUT O 3
UNREG GND 4
NC 5
W992 BATT (−) BLK
SS-86 BOARD (1/3)
END SENS
TOP SENS
PH001 PT480FS
PH002 PT480FS
Q005 TAPE END DETECT
IC003 LOADING MOTOR DRIVE
IC003 LB1631M
CHASSIS
CN004 8P
GND 1
RF SWP 2
REC RF 3
RF OUT 4
CH 5
SEL1 6
SEL2 7
ATF LOCK 8
GND L
RF OUT M
CH 1' OUT N
CN003 13P
VIDEO HEAD 1'CH
VIDEO HEAD 2CH
VIDEO HEAD 1CH
FLYING ERASE HEAD
CH1' GND 1
CH1' (Y) 2
CH1' (X) 3
CH2 GND 4
CH2 (Y) 5
CH2 (X) 6
CH1 GND 7
CH1 (Y) 8
CH1 (X) 9
FE GND 10
FE (Y) 11
FE (X) 12
GND 13
K CH 1' (X)
J CH 1' (Y)
I CH 1' GND
H CH 1 (X)
G CH 1 (Y)
F CH 1 GND
E CH 2 (X)
D CH 2 (Y)
C CH 2 GND
B GND
A REC RF
(See page 107.)
SS-86 BOARD
VIDEO, AUDIO BL
Q302 AMP
Q303 ERASE OSC
TP004
W002 MECHA CHASSIS
CN006 5P
UNREG 1
UNREG 2
SP/LP 3
UNREG GND 4
UNREG GND 5
C014 0.1
TP001
CHASSIS

, FP-53 (TAPE SELECT/CASSETTE IN SWITCH) SCHEMATIC DIAGRAM

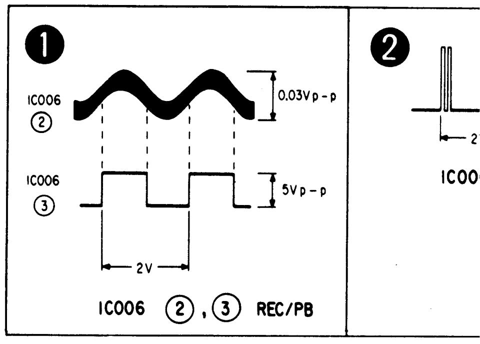
IC006 CX20115A

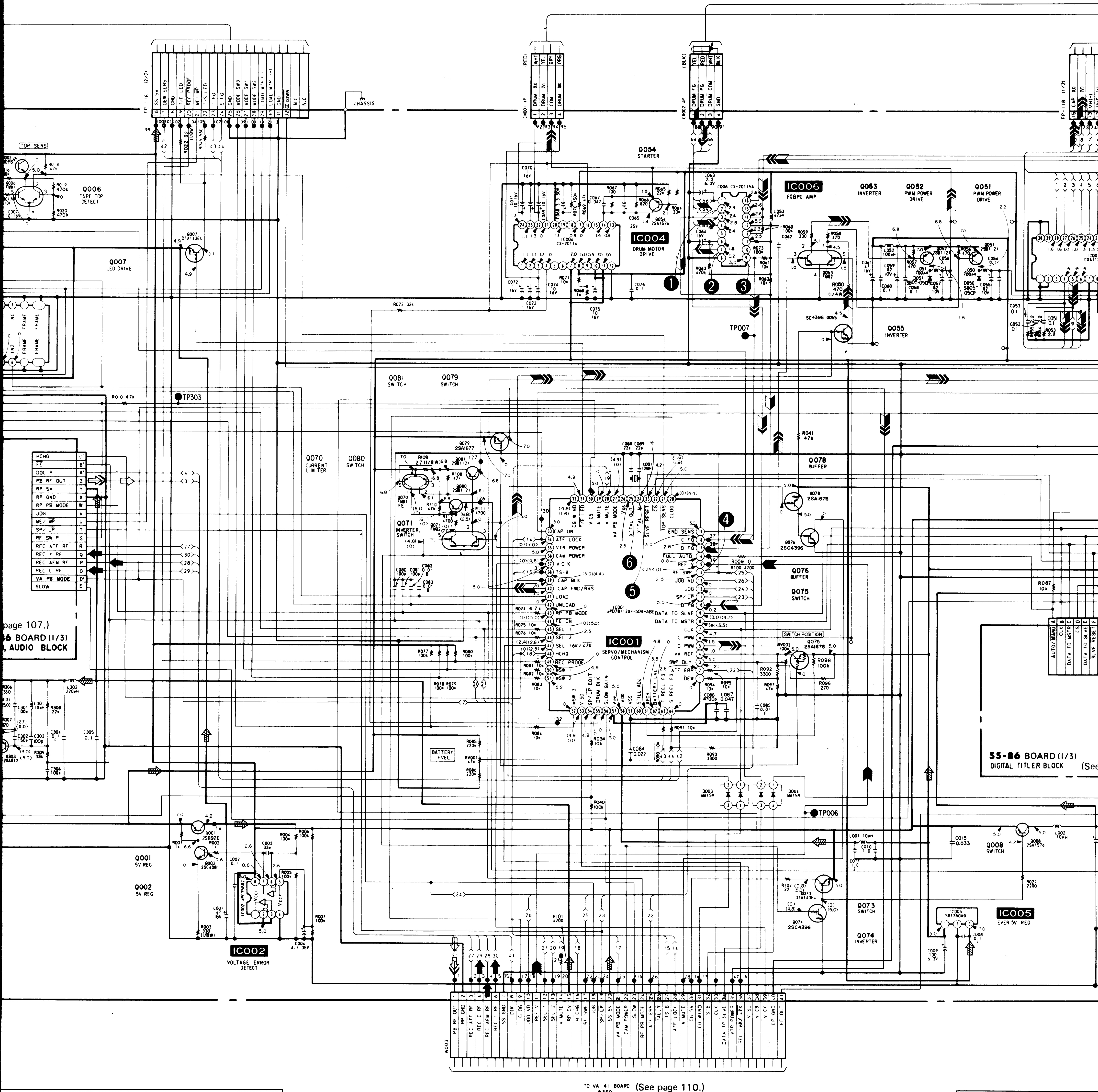

LIM
COMP
BUFF
CAPSTAN FGx2 LOGIC
COMP
2.5V
PRE
PRE
COMP
PRE
LEVEL SHIFT
COMP
Vcc
GND

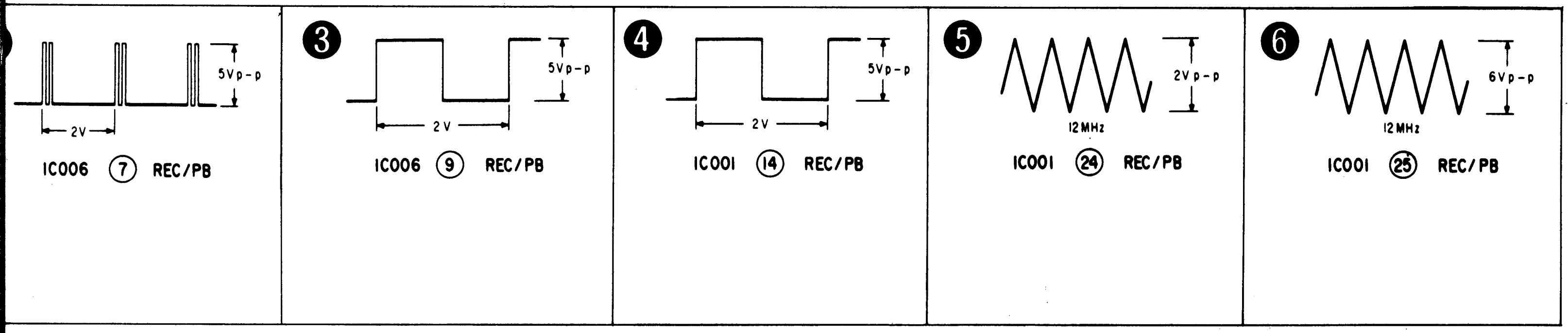
IC007 CXA1127M

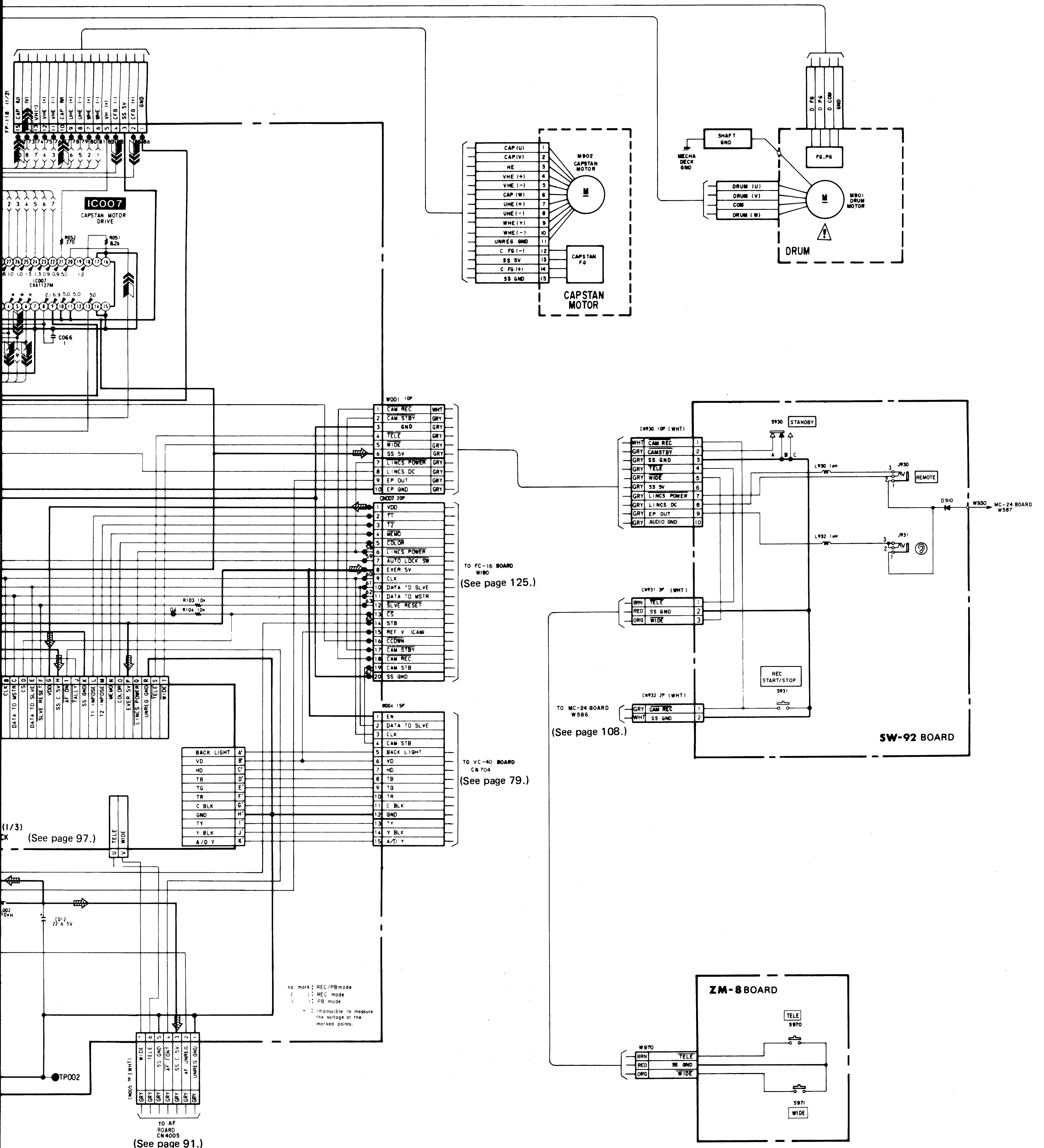

STBY
POWER OFF
VCC3
VCC1
ANGLE
CAP CW/CCW
VS
VCC2
U
V
W
120° LOGIC
HE POWER
GND
NC
NC
BR
RF

SS-86 BOARD




FP-118 (2/2)
CHASSIS
TOP SENS
Q006 TAPE TOP DETECT
Q007 LED DRIVE
TP303
Q054 STARTER
IC004 DRUM MOTOR DRIVE
IC006 FGBPG AMP
Q053 INVERTER
Q052 PWM POWER DRIVE
Q051 PWM POWER DRIVE
TP007
Q055 INVERTER
Q081 SWITCH
Q079 SWITCH
Q070 CURRENT LIMITER
Q080 SWITCH
Q071 INVERTER, SWITCH
Q078 BUFFER
Q076 BUFFER
Q075 SWITCH
SWITCH POSITION
IC001 SERVO/MECHANISM CONTROL
BATTERY LEVEL
(See page 107.)
SS-86 BOARD (1/3)
AUDIO BLOCK
SS-86 BOARD (1/3)
DIGITAL TITLER BLOCK
TP006
Q001 5V REG
Q002 5V REG
IC002 VOLTAGE ERROR DETECT
Q073 SWITCH
Q074 INVERTER
Q008 SWITCH
IC005 EVER 5V REG
TO VA-41 BOARD (See page 110.)
W360





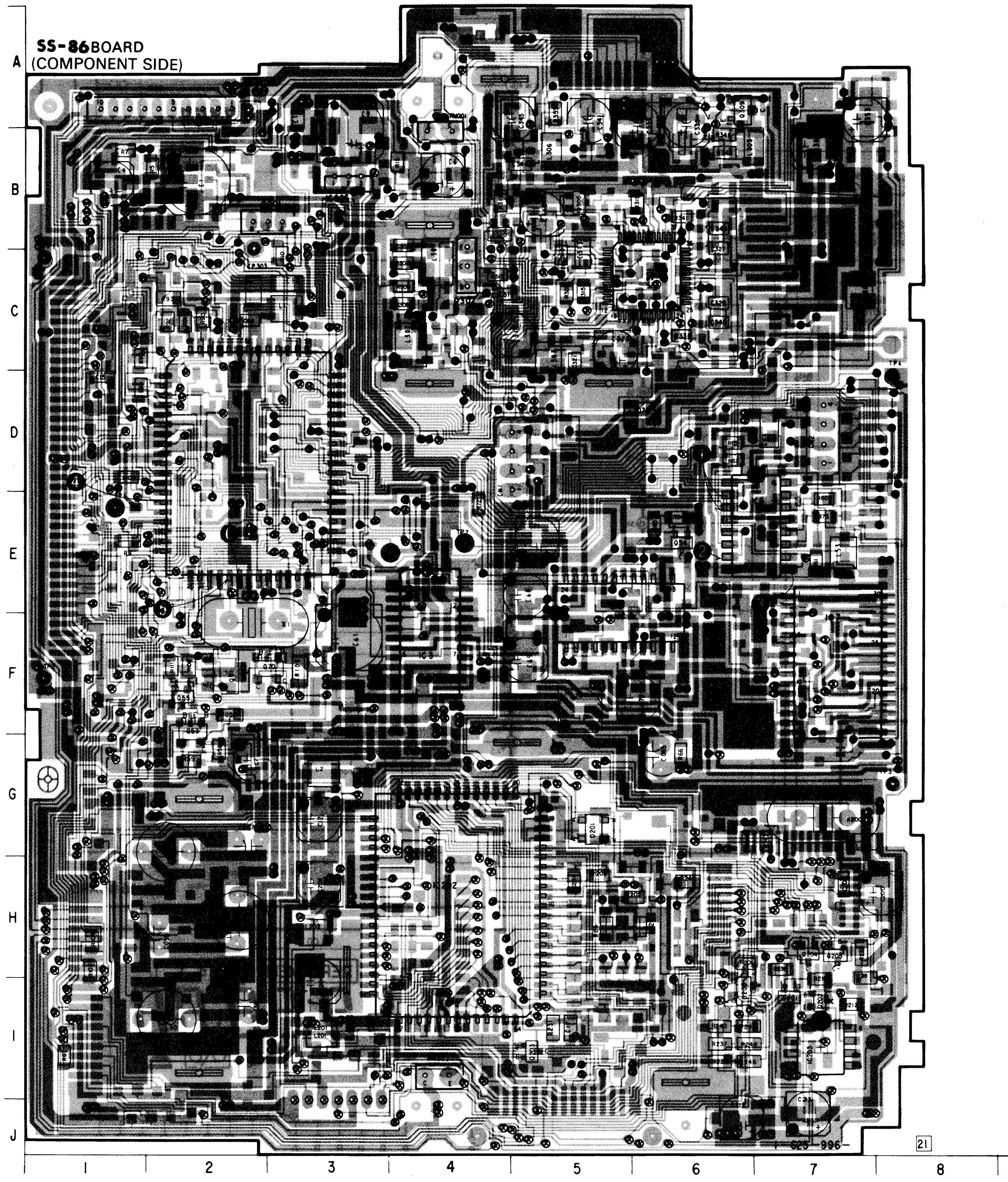
FP-118 (1/2)
CAP (U)
CAP (V)
VH(-)
VHE (+)
VHE (-)
CAP (W)
UHE (+)
UHE (-)
WHE (+)
WHE (-)
VH (+)
SS 5V
CFG (-)
CFG (+)
GND
IC007
CAPSTAN MOTOR DRIVE
IC007 CXA1127M
R052 270
R051 8.2k
C066 1
CAP(U)
CAP(V)
HE
VHE (+)
VHE (-)
CAP (W)
UHE (+)
UHE (-)
WHE (+)
WHE (-)
UNREG GND
C FG (-)
SS 5V
C FG (+)
SS GND
M902 CAPSTAN MOTOR
M
CAPSTAN FG
CAPSTAN MOTOR
D FG
D PG
D COM
GND
SHAFT GND
MECHA DECK GND
FG,PG
DRUM (U)
DRUM (V)
COM
DRUM (W)
M901 DRUM MOTOR
DRUM
W001 10P
CAM REC
CAM STBY
GND
TELE
WIDE
SS 5V
LINCS POWER
LINCS DC
EP OUT
EP GND
WHT
GRY
CN007 20P
VDD
T1
T2
MEMO
COLOR
LINCS POWER
AUTO LOCK SW
EVER 5V
CLK
DATA TO SLVE
DATA TO MSTR
SLVE RESET
CS
STB
REF V (CAM)
CCDWN
CAM STBY
CAM REC
CAM STB
SS GND
TO FC-16 BOARD W190
(See page 125.)
R103 10k
R104 10k
Q4
W004 15P
EN
DATA TO SLVE
CLK
CAM STB
BACK LIGHT
VD
HD
TB
TG
TR
C BLK
GND
TY
Y BLK
A/D Y
TO VC-40 BOARD CN 704
(See page 79.)
CLK
DATA TO MSTR
CS
DATA TO SLVE
SLVE RESET
VDD
SS C 5V
AF ON
TALLY
SS GND
T1 IMPOSE
T2
MEMO
COLOR
EVER 5V
LINCS POWER
UNREG GND
TELE
WIDE
BACK LIGHT
VD
HD
TB
TG
TR
C BLK
GND
TY
Y BLK
A/D Y
(1/3)
CK
(See page 97.)
TELE
WIDE
L002 100μH
C012 22 6.3V
TP002
CN005 7P (WHT)
WIDE
TELE
SS GND
AF CONT
SS C 5V
AF UNREG
AF GND
GRY
TO AF BOARD CN4005
(See page 91.)
S930 STANDBY
CN930 10P (WHT)
CAM REC
CAMSTBY
SS GND
TELE
WIDE
SS 5V
LINCS POWER
LINCS DC
EP OUT
AUDIO GND
L930 1μH
J930
REMOTE
D910
W930
MC-24 BOARD W587
L932 1μH
J931
CN931 3P (WHT)
BRN
RED
ORG
TELE
SS GND
WIDE
REC START/STOP
S931
CN932 2P (WHT)
CAM REC
SS GND
TO MC-24 BOARD W586
(See page 108.)
SW-92 BOARD
ZM-8 BOARD
TELE
S970
W970
TELE
SS GND
WIDE
S971
WIDE

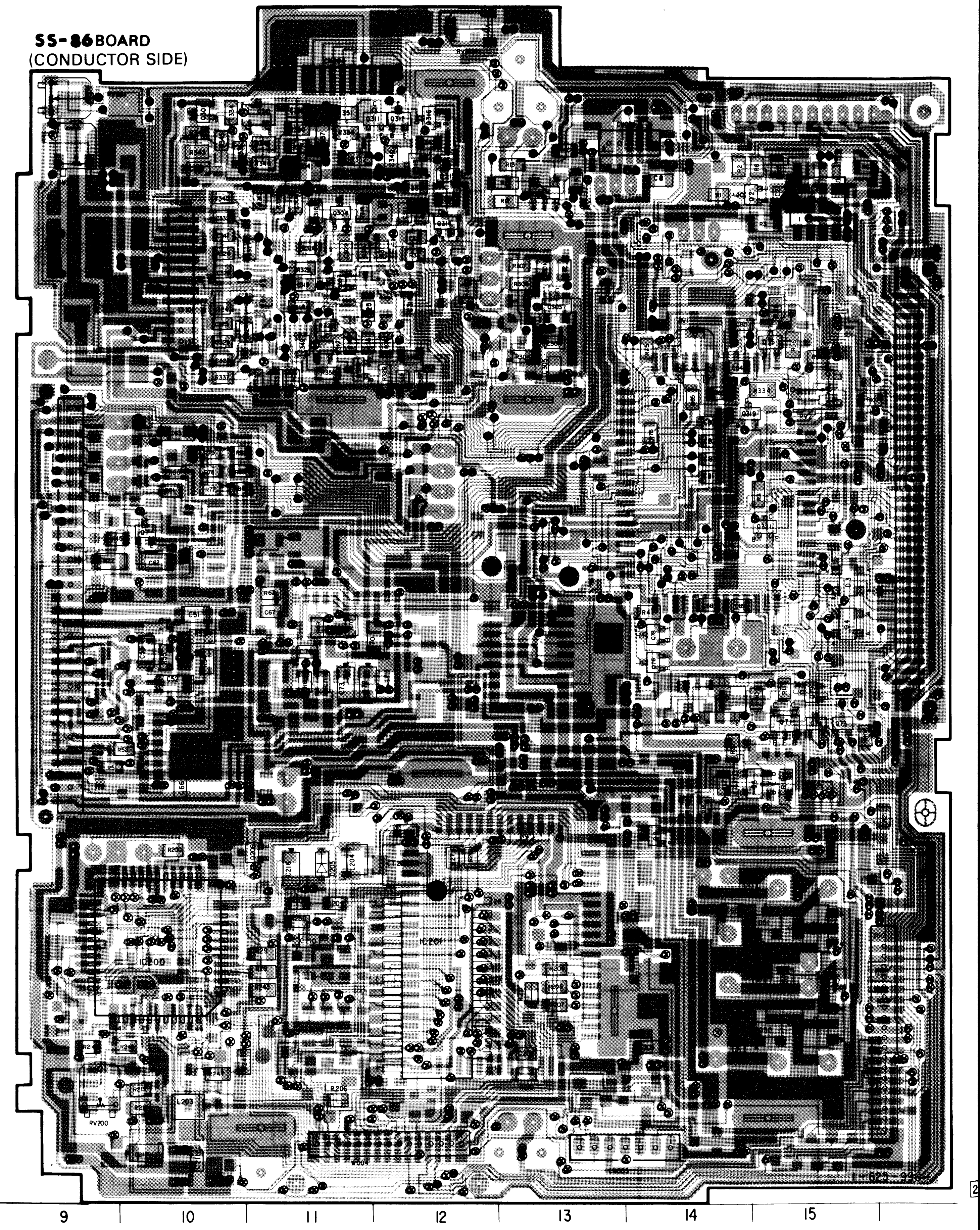
no mark : REC/PB mode
( ) : REC mode
( ) : PB mode
* : impossible to measure the voltage at the marked points.

SERVO/SYSTEM CONTROL SERVO/SYSTEM CONTROL

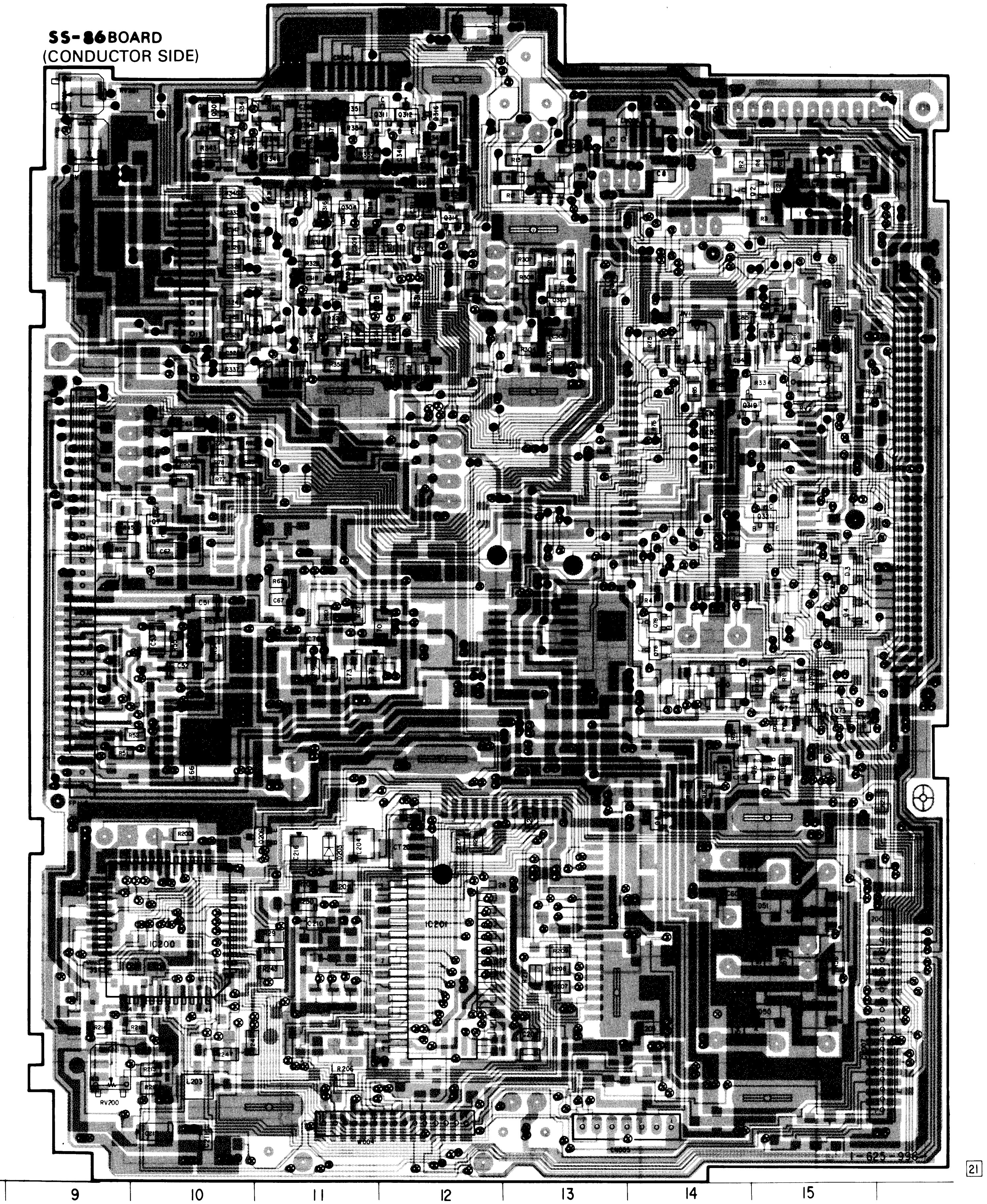
SS-86 (SYSTEM CONTROL, SERVO), SW-92 (START/STOP, STANDBY SWITCH, INPUT/OUTPUT JACK), ZM-8 (ZOOM SWITCH), PA-13 (POWER), CC-7 (MODE SWITCH), FP-53 (TAPE SELECT/CASSETTE IN SWITCH) PRINTED WIRING BOARDS

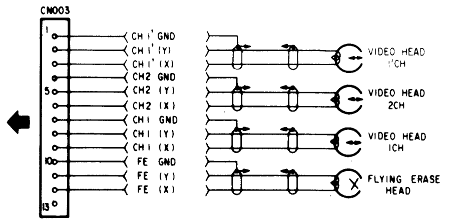
– Ref. No. SS-86 BOARD: 2,000 series, SW-92, ZM-8, PA-13, CC-7, FP-53 BOARDS: 4,000 series –

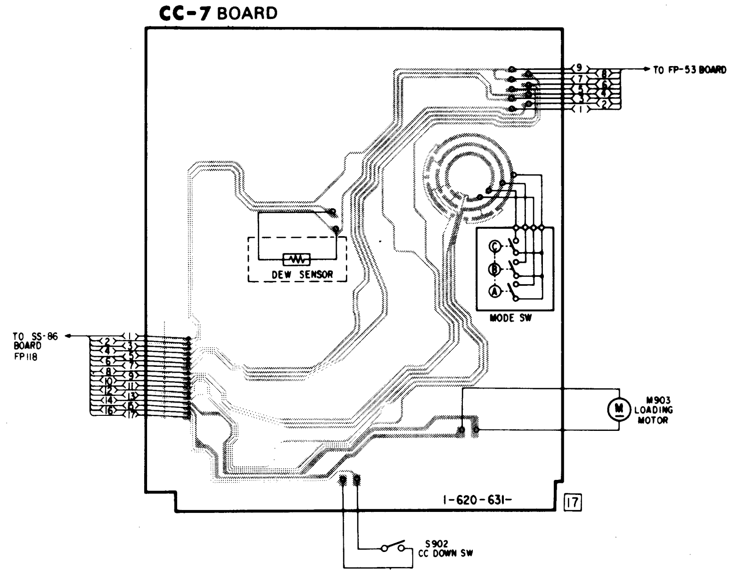

SS-86 BOARD
(COMPONENT SIDE)
A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
8
1-625-996-
21

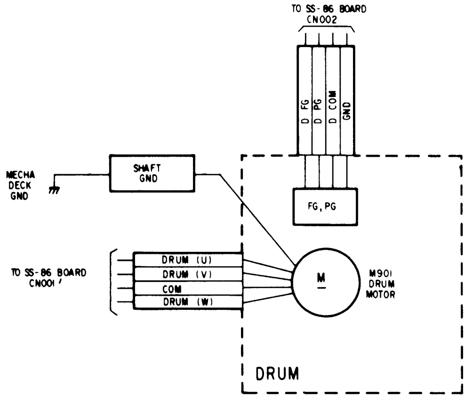

SS-86 BOARD
(CONDUCTOR SIDE)
9
10
11
12
13
14
15
1-625-996-

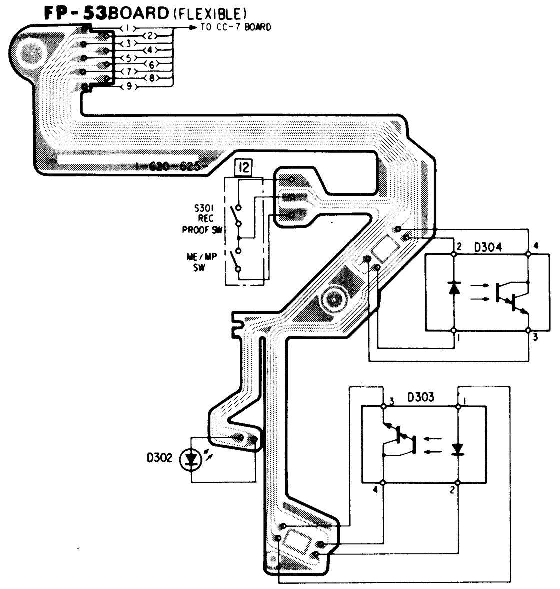
H), PA-13 (POWER), CC-7 (MODE SWITCH), FP-53 (TAPE SELECT/CASSETTE IN SWITCH) PRINTED WIRING BOARDS

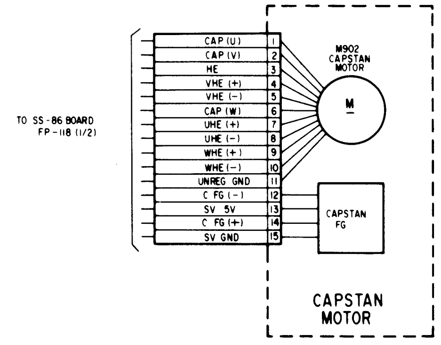

SS-86 BOARD
(CONDUCTOR SIDE)
IC201
1-620-990
21
9
10
11
12
13
14
15

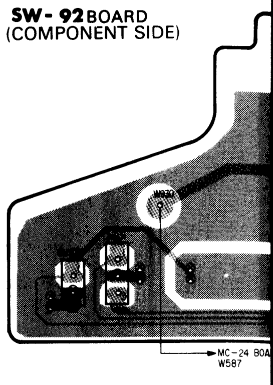

CN003
CH 1' GND
CH 1' (Y)
CH 1' (X)
CH2 GND
CH2 (Y)
CH2 (X)
CH1 GND
CH1 (Y)
CH1 (X)
FE GND
FE (Y)
FE (X)
VIDEO HEAD 1'CH
VIDEO HEAD 2CH
VIDEO HEAD 1CH
FLYING ERASE HEAD

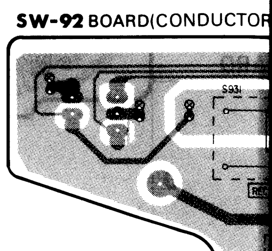

CC-7 BOARD
TO FP-53 BOARD
DEW SENSOR
MODE SW
TO SS-86 BOARD FP118
M903 LOADING MOTOR
1-620-631-
17
S902 CC DOWN SW


TO SS-86 BOARD CN002
D FG
D PG
D COM
GND
MECHA DECK GND
SHAFT GND
FG, PG
TO SS-86 BOARD CN001'
DRUM (U)
DRUM (V)
COM
DRUM (W)
M
M901 DRUM MOTOR
DRUM


FP-53 BOARD (FLEXIBLE)
TO CC-7 BOARD
1-620-625-
12
S301 REC PROOF SW
ME/MP SW
D304
D303
D302


TO SS-86 BOARD FP-118 (1/2)
CAP (U)
CAP (V)
HE
VHE (+)
VHE (-)
CAP (W)
UHE (+)
UHE (-)
WHE (+)
WHE (-)
UNREG GND
C FG (-)
SV 5V
C FG (+)
SV GND
M902 CAPSTAN MOTOR
M
CAPSTAN FG
CAPSTAN MOTOR


SW-92 BOARD
(COMPONENT SIDE)
MC-24 BOA
W587


SW-92 BOARD (CONDUCTOR
S931

CN001	D·5
CN002	D·7
CN003	C·10
CN004	A·11
CN005	I·5
CN006	B·14
CN007	H·16
D001	I·14
D003	E·15
D004	F·15
D007	E·10
D008	I·14
D050	H·15
D051	H·14
D200	H·6
D201	G·5
D203	D·11
IC001	D·2
IC002	B·15
IC003	F·4
IC004	F·5
IC005	B·3
IC006	E·6
IC007	F·7
IC200	H·10
IC201	H·12
IC202	G·4
IC203	I·7
IC301	C·6
Q001	B·2
Q002	B·14
Q005	B·13
Q006	G·14
Q007	E·10
Q008	G·14
Q051	H·15
Q052	H·15
Q053	G·2
Q054	E·6
Q055	F·2
Q070	F·3
Q071	F·15
Q073	F·15
Q074	F·15
Q076	F·14
Q078	F·14
Q079	F·15
Q080	F·14
Q081	F·2
Q201	H·7
Q202	I·7
Q203	I·5
Q204	H·7
Q205	H·7
Q206	G·10
Q302	C·4
Q303	C·13
Q304	C·11
Q305	B·5
Q307	C·11
Q317	C·11
Q318	D·11
Q319	D·15
Q320	C·5
Q321	E·15
RV001	C·14
RV002	D·15
RV200	I·9
RV301	A·9
RV302	B·9
RV306	A·12
TP001	C·1
TP002	F·1
TP003	C·3
TP004	D·8
TP006	E·1
TP007	E·4
TP303	C·23

Note:

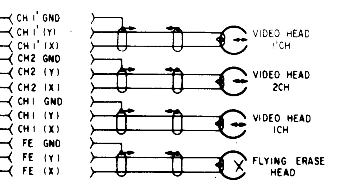
- ⊗ :
- ▨ :

Caution:

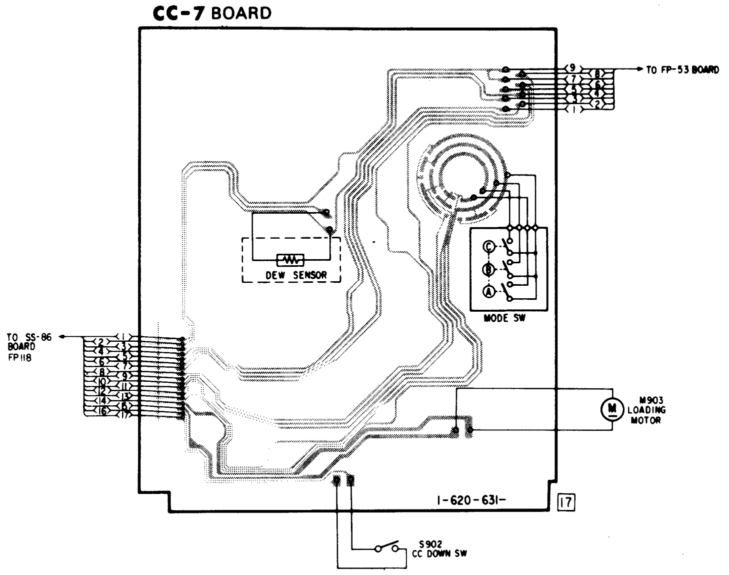
Pattern fa
(Conducto

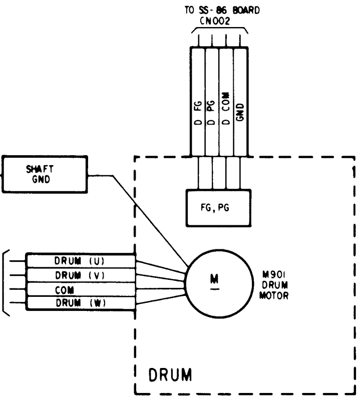
Parts face
(Compone

- Digital
Q073,
resistor.
Refer to
transisto

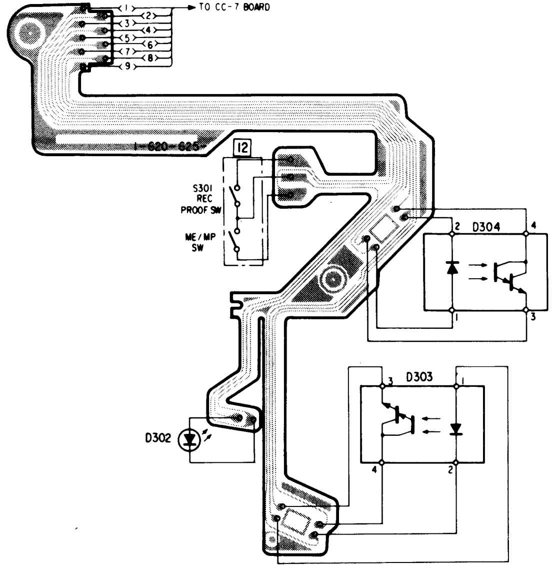

CH 1' GND
CH 1' (Y)
CH 1' (X)
CH2 GND
CH2 (Y)
CH2 (X)
CH1 GND
CH1 (Y)
CH1 (X)
FE GND
FE (Y)
FE (X)
VIDEO HEAD 1'CH
VIDEO HEAD 2CH
VIDEO HEAD 1CH
FLYING ERASE HEAD

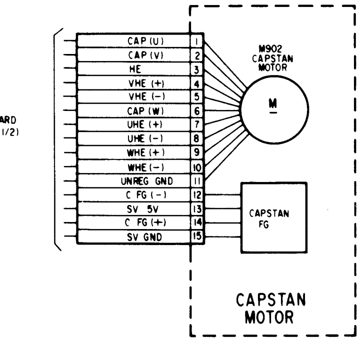
CC-7 BOARD


TO FP-53 BOARD
TO SS-86 BOARD FP118
DEW SENSOR
MODE SW
M903 LOADING MOTOR
1-620-631-
17
S902 CC DOWN SW


TO SS-86 BOARD CN002
D FG
D PG
D COM
GND
SHAFT GND
FG, PG
DRUM (U)
DRUM (V)
COM
DRUM (W)
M
M901 DRUM MOTOR
DRUM

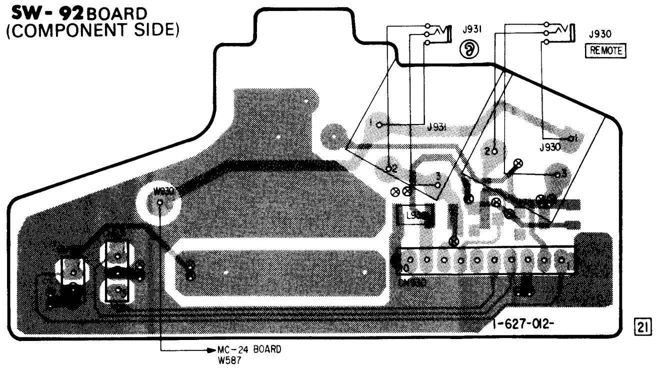
FP-53BOARD (FLEXIBLE)


TO CC-7 BOARD
1-620-625-
12
S301 REC PROOF SW
ME/MP SW
D304
D303
D302

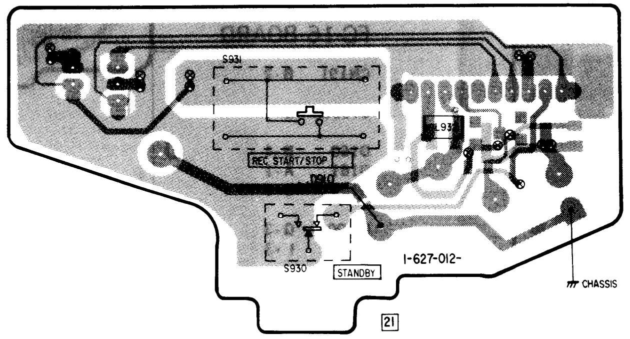

ARD
1/2)
CAP (U)
CAP (V)
HE
VHE (+)
VHE (−)
CAP (W)
UHE (+)
UHE (−)
WHE (+)
WHE (−)
UNREG GND
C FG (−)
SV 5V
C FG (+)
SV GND
M902 CAPSTAN MOTOR
M
CAPSTAN FG
CAPSTAN MOTOR

CN001	D·5	IC001	D·2	Q052	H·15	Q302	C·4	TP001	C·1
CN002	D·7	IC002	B·15	Q053	G·2	Q303	C·13	TP002	F·1
CN003	C·10	IC003	F·4	Q054	E·6	Q304	C·11	TP003	C·3
CN004	A·11	IC004	F·5	Q055	F·2	Q305	B·5	TP004	D·8
CN005	I·5	IC005	B·3	Q070	F·3	Q307	C·11		
CN006	B·14	IC006	E·6	Q071	F·15	Q317	C·11	TP006	E·1
CN007	H·16	IC007	F·7	Q073	F·15	Q318	D·11	TP007	E·4
		IC200	H·10	Q074	F·15	Q319	D·15	TP303	C·23
D001	I·14	IC201	H·12			Q320	C·5		
D003	E·15	IC202	G·4	Q076	F·14	Q321	E·15		
D004	F·15	IC203	I·7	Q078	F·14				
D007	E·10	IC301	C·6	Q079	F·15	RV001	C·14		
D008	I·14			Q080	F·14	RV002	D·15		
D050	H·15	Q001	B·2	Q081	F·2				
D051	H·14	Q002	B·14	Q201	H·7	RV200	I·9		
D200	H·6	Q005	B·13	Q202	I·7	RV301	A·9		
D201	G·5	Q006	G·14	Q203	I·5	RV302	B·9		
D203	D·11	Q007	E·10	Q204	H·7	RV306	A·12		
		Q008	G·14	Q205	H·7				
		Q051	H·15	Q206	G·10				

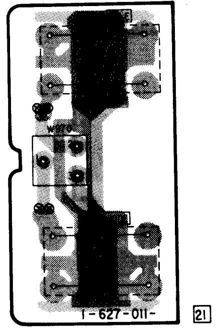
SW-92BOARD
(COMPONENT SIDE)


J931
J930
REMOTE
W930
L930
CN930
1-627-012-
21
MC-24 BOARD W587

SW-92 BOARD(CONDUCTOR SIDE)


S931
L931
REC START/STOP
D910
S930
STANDBY
1-627-012-
CHASSIS
21

ZM-8 BOARD



Note:

- ⊗ : Through hole.
- ▨ : Pattern of the rear side.

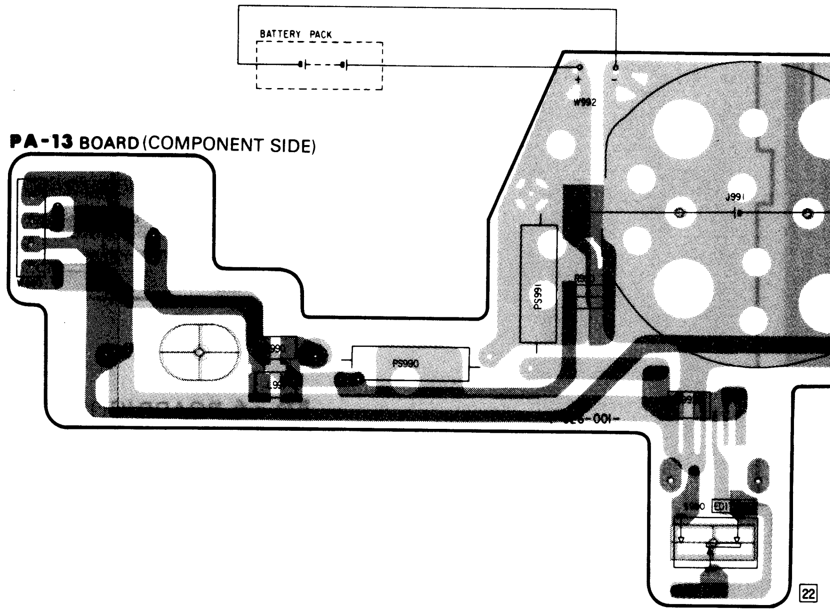
Caution:

Pattern face side: (Conductor Side) Parts on the pattern face side seen from the pattern face are indicated.

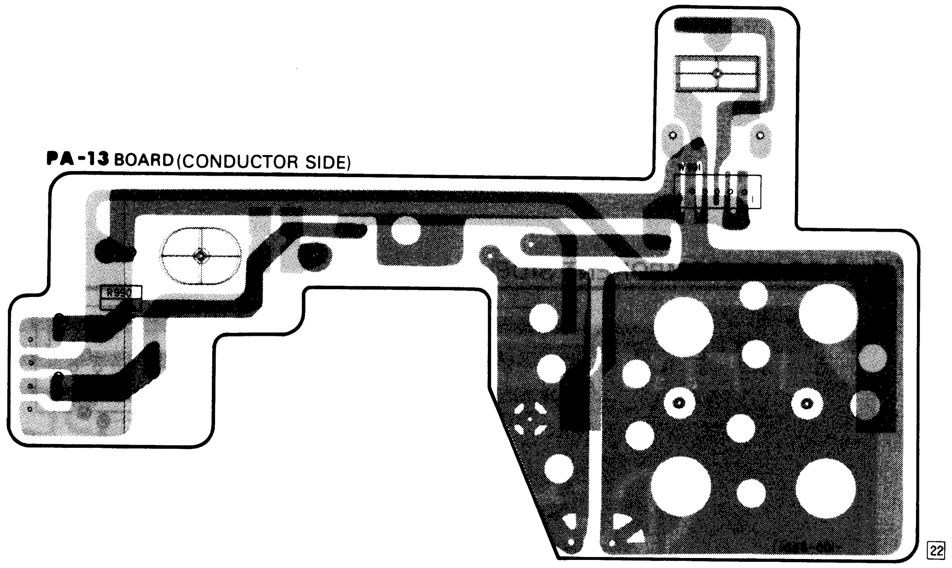
Parts face side: (Component Side) Parts on the parts face side seen from the parts face are indicated.

- Digital transistor (SS-86: Q007, Q053, Q055, Q071, Q073, Q074, Q076, Q078, Q079) is transistor with resistor.
  Refer to the SS-86 board schematic diagram for digital transistor.

PA-13 BOARD(COMPONENT SIDE)


BATTERY PACK
W992
J991
PS991
PS990
1-626-001-
22

PA-13 BOARD(CONDUCTOR SIDE)

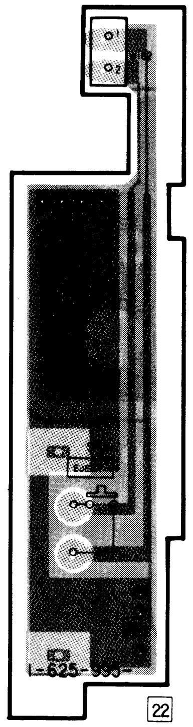


MODE CONTROL MODE CONTROL

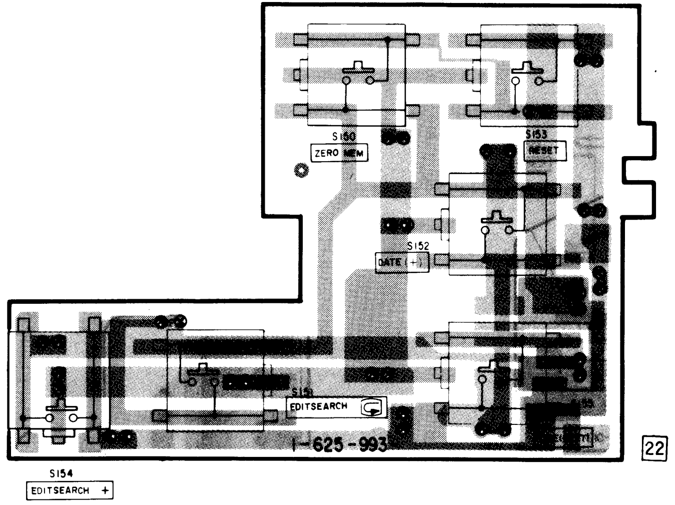
FC-16 (MODE CONTROL), FV-1 (POWER SWITCH, VTR FUNCTION SWITCH), FD-6 (CAMERA DATA FUNCTION SWITCH), EJ-4 (EJECT SWITCH) PRINTED WIRING BOARDS

– Ref. No. FC-16, FV-1, FD-6, EJ-4 BOARDS: 5,000 series –

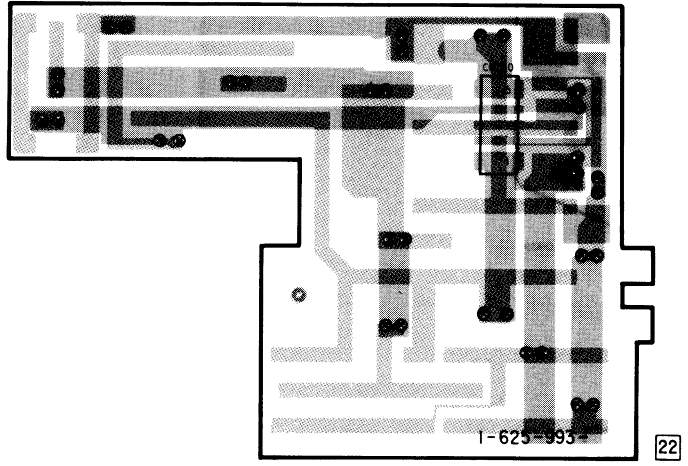
EJ-4 BOARD(COMPONENT SIDE)


EJECT
1-625-993-
22

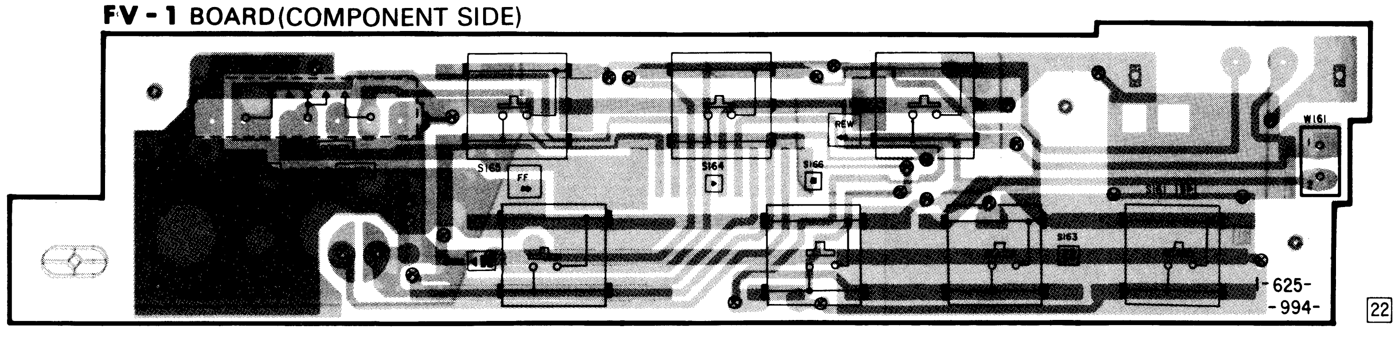
FD-6 BOARD (COMPONENT SIDE)


S150
ZERO MEM
S153
RESET
S152
DATE (–)
S154
EDITSEARCH
1-625-993
22
S154
EDITSEARCH +

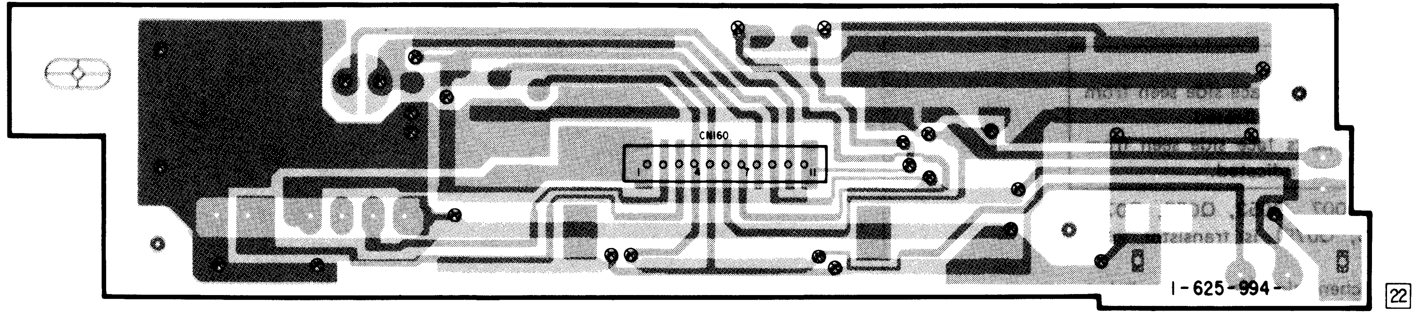
FD-6 BOARD(CONDUCTOR SIDE)



FV-1 BOARD(COMPONENT SIDE)

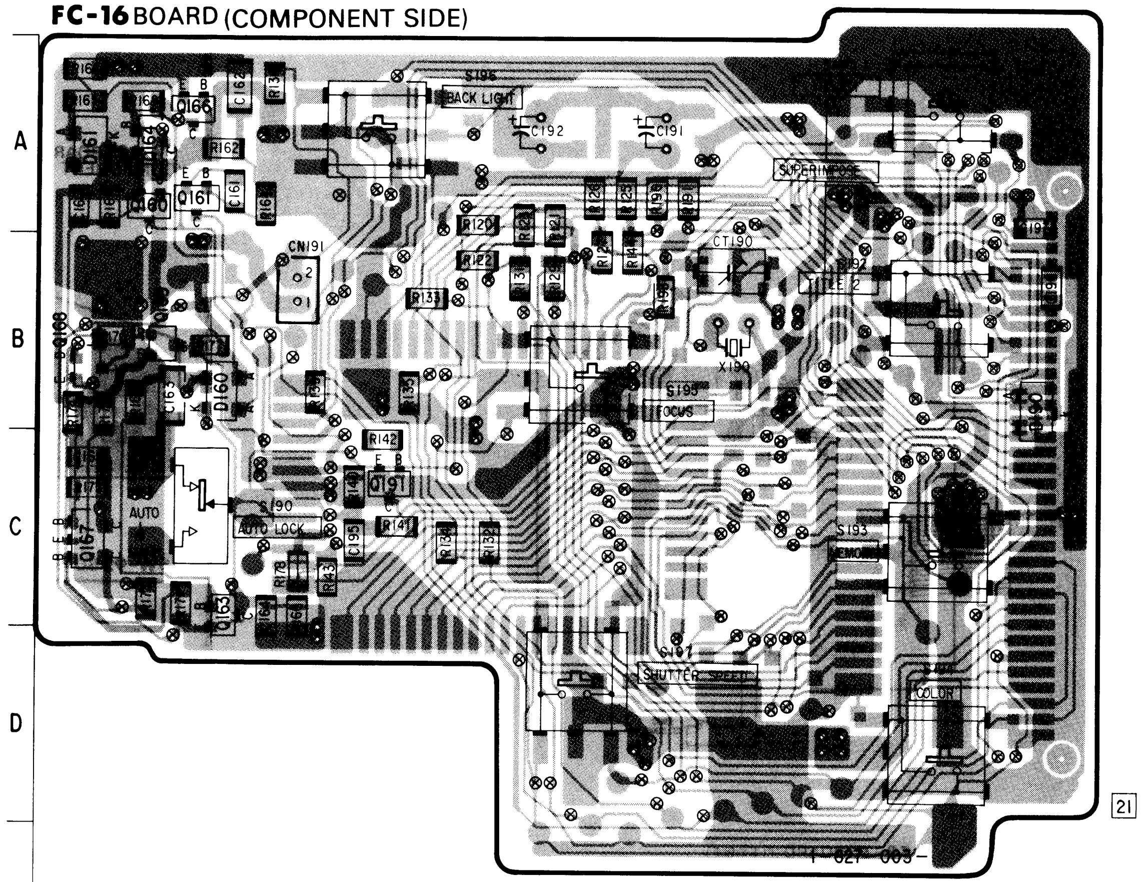

W161
S165
FF
S164
S166
REW
S163
1-625-994-
22

FV-1 BOARD(CONDUCTOR SIDE)

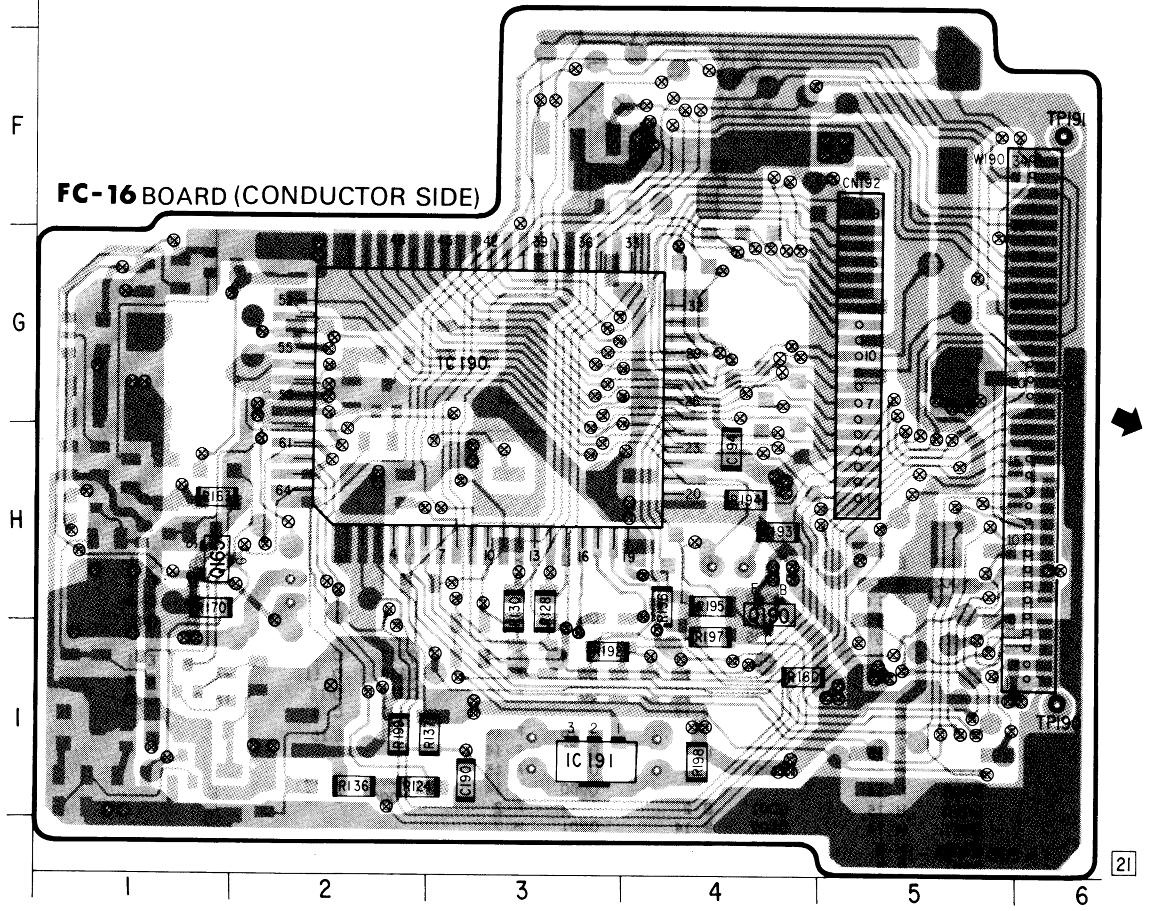

CN160
1-625-994-
22

FC-16 BOARD	
CN191	B-2
CT190	B-4
D160	B-1
D161	A-1
D190	B-6
IC190	G-3
IC191	I-3
Q160	A-1
Q161	A-1
Q163	C-1
Q164	A-1
Q165	H-1
Q166	A-1
Q167	C-1
Q168	B-1
Q169	B-1
Q190	H-4
Q191	C-2
Q192	I-1
TP190	I-6
TP191	F-6

FC-16 BOARD (COMPONENT SIDE)


A
B
C
D
BACK LIGHT
SUPERIMPOSE
CN191
CT190
X190
S195
FOCUS
S190
AUTO LOCK
AUTO
S193
MEMORY
S191
SHUTTER SPEED
S192
TITLE
COLOR
1-627-003-
21

FC-16 BOARD (CONDUCTOR SIDE)


E
F
G
H
I
TP191
W190
CN192
IC190
IC191
TP190
1
2
3
4
5
6
21

Note:

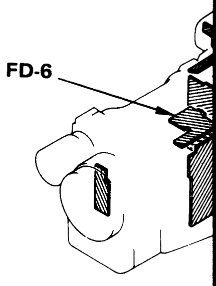
- ⊗ : Through hole.
- ▨ : Pattern of the rear

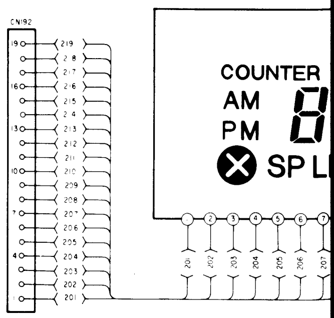
Caution:

Pattern face side: (Conductor Side) Parts on t the patter

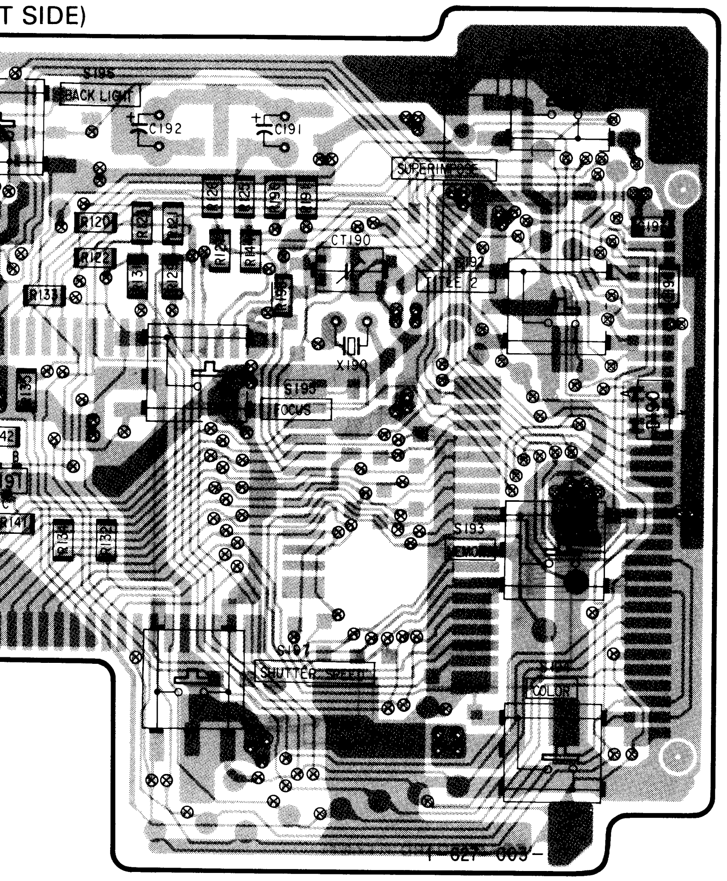
Parts face side: (Component Side) Parts on the parts f

- Digital transistor (FC-16: resistor.
  Refer to the FC-16 board transistor.




CN192
COUNTER
AM
PM
SP L

T SIDE)


BACK LIGHT
C192
C191
SUPERIMPOSE
CT190
TITLE 2
X190
S192
FOCUS
S193
MEMORY
SHUTTER
COLOR
21

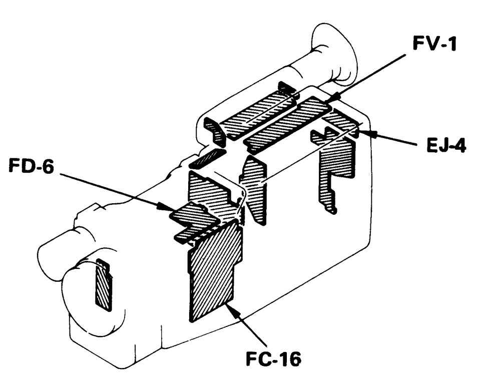
Note:

- ⊗ : Through hole.
- ▨ : Pattern of the rear side.

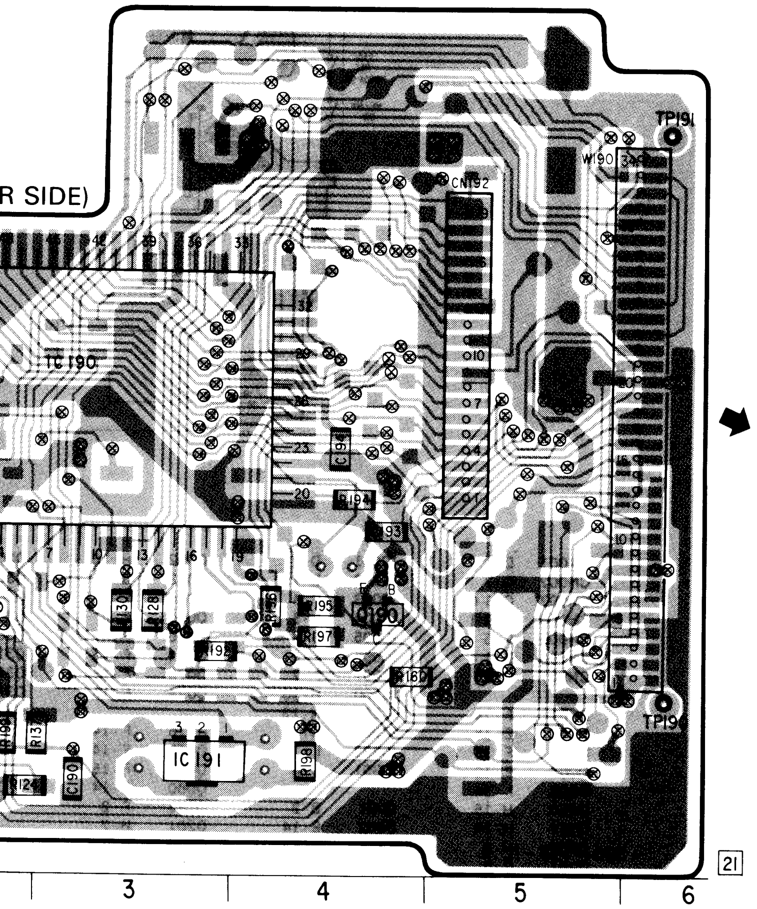
Caution:

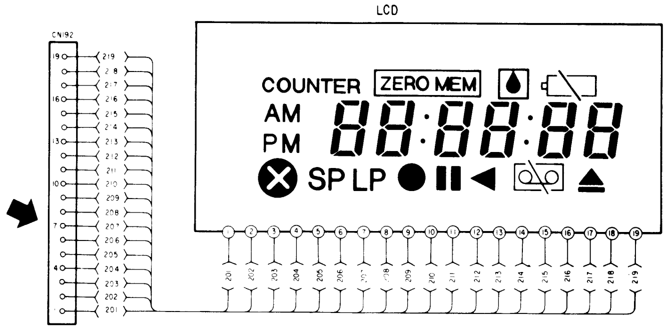
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

- Digital transistor (FC-16: Q169, Q190) is transistor with resistor. Refer to the FC-16 board schematic diagram for digital transistor.

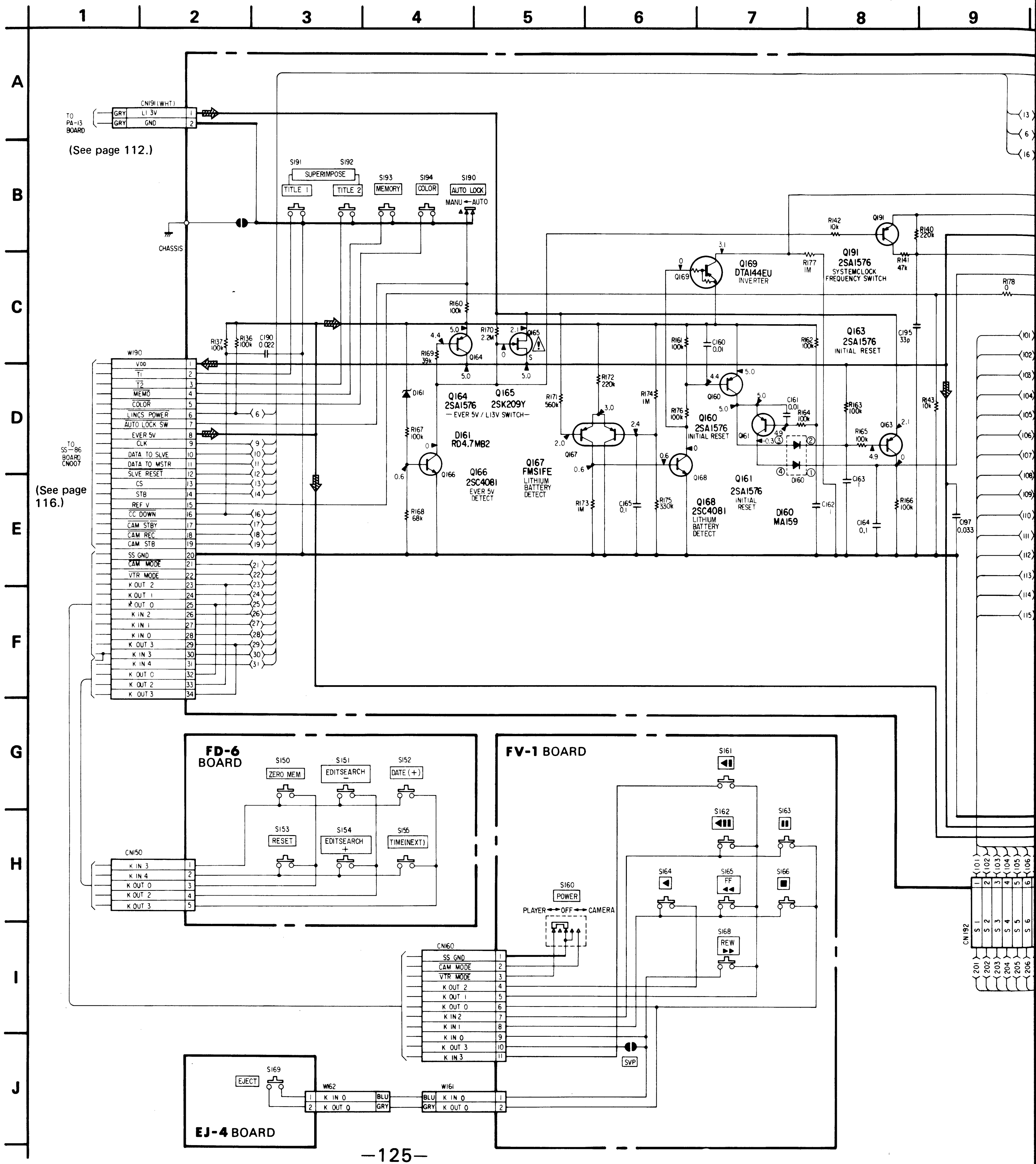

FV-1
EJ-4
FD-6
FC-16

R SIDE)


TP191
W190
CN192
TC190
IC191
TP192
21
3
4
5
6


CN192
LCD
COUNTER
ZERO MEM
AM
PM
88:88:88
SP LP

FC-16 (MODE CONTROL), FV-1 (POWER SWITCH, VTR FUNCTION SWITCH), FD-6 (CAMERA DATA FUNCTION SWITCH), EJ-4 (EJECT SWITC

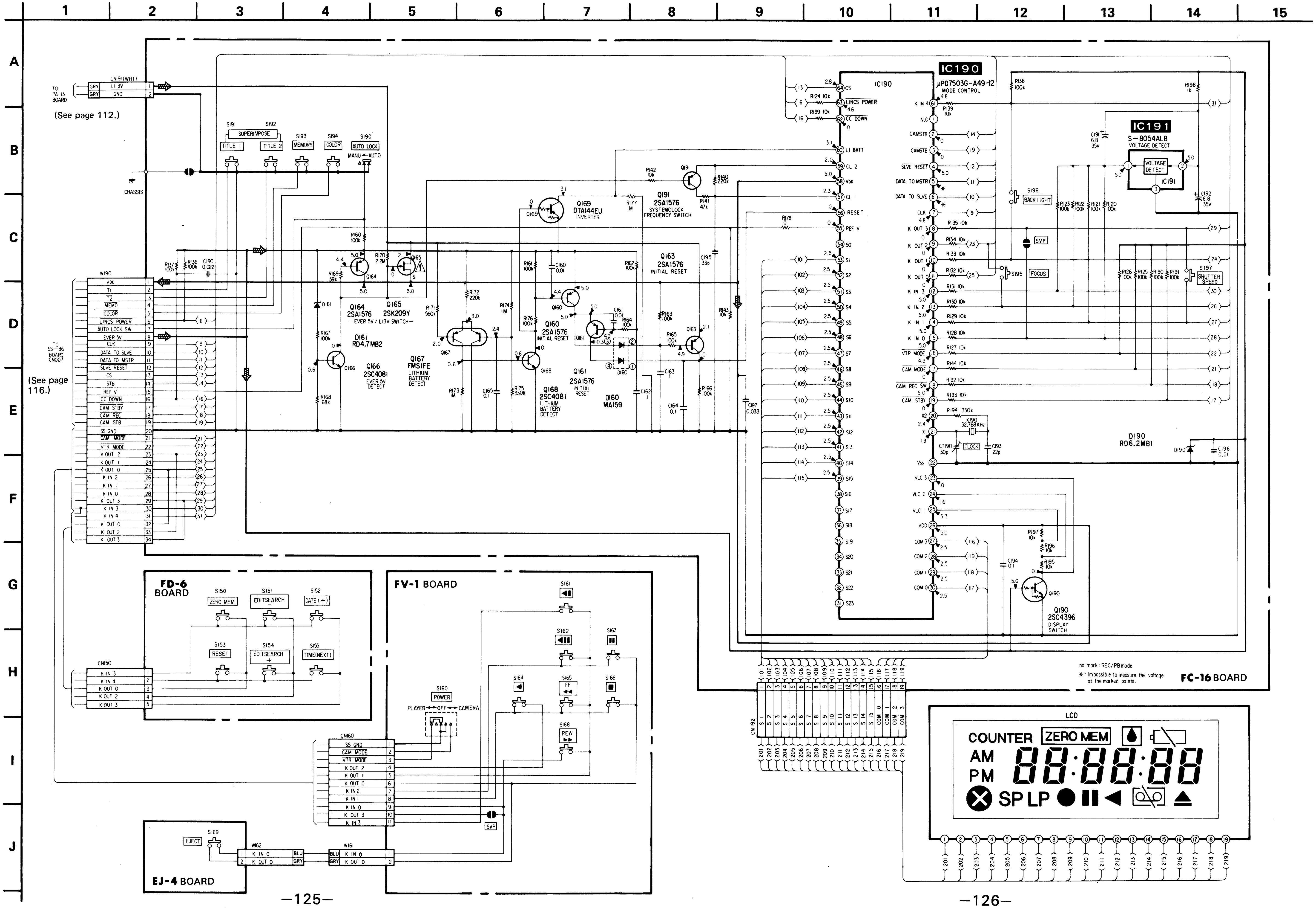

1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
I
J
TO PA-13 BOARD
CN191 (WHT)
LI 3V
GND
(See page 112.)
CHASSIS
S191
S192
SUPERIMPOSE
TITLE 1
TITLE 2
S193
MEMORY
S194
COLOR
S190
AUTO LOCK
MANU ← AUTO
Q169
DTA144EU
INVERTER
Q191
2SA1576
SYSTEM CLOCK FREQUENCY SWITCH
Q163
2SA1576
INITIAL RESET
Q164
2SA1576
Q165
2SK209Y
— EVER 5V / LI3V SWITCH —
D161
RD4.7MB2
Q166
2SC4081
EVER 5V DETECT
Q167
FMSIFE
LITHIUM BATTERY DETECT
Q160
2SA1576
INITIAL RESET
Q168
2SC4081
LITHIUM BATTERY DETECT
Q161
2SA1576
INITIAL RESET
D160
MA159
W190
VDD
T1
T2
MEMO
COLOR
LINCS POWER
AUTO LOCK SW
EVER 5V
CLK
DATA TO SLVE
DATA TO MSTR
SLVE RESET
CS
STB
REF V
CC DOWN
CAM STBY
CAM REC
CAM STB
SS GND
CAM MODE
VTR MODE
K OUT 2
K OUT 1
K OUT 0
K IN 2
K IN 1
K IN 0
K OUT 3
K IN 3
K IN 4
K OUT C
K OUT 2
K OUT 3
TO SS-86 BOARD CN007
(See page 116.)
FD-6 BOARD
S150
ZERO MEM
S151
EDITSEARCH −
S152
DATE (+)
S153
RESET
S154
EDITSEARCH +
S155
TIME(NEXT)
CN150
K IN 3
K IN 4
K OUT 0
K OUT 2
K OUT 3
FV-1 BOARD
S161
S162
S163
S164
S165
FF
S166
S168
REW
S160
POWER
PLAYER ← OFF → CAMERA
CN160
SS GND
CAM MODE
VTR MODE
K OUT 2
K OUT 1
K OUT 0
K IN 2
K IN 1
K IN 0
K OUT 3
K IN 3
SVP
EJ-4 BOARD
S169
EJECT
W162
K IN 0
K OUT 0
BLU
GRY
W161
CN192

e side seen from
ated.
side seen from
ed.
s transistor with
gram for digital

MODE CONTROL MODE CONTROL

FC-16 (MODE CONTROL), FV-1 (POWER SWITCH, VTR FUNCTION SWITCH), FD-6 (CAMERA DATA FUNCTION SWITCH), EJ-4 (EJECT SWITCH) SCHEMATIC DIAGRAM

– Ref. No. FC-16, FV-1, FD-6, EJ-4 BOARDS: 5,000 series –

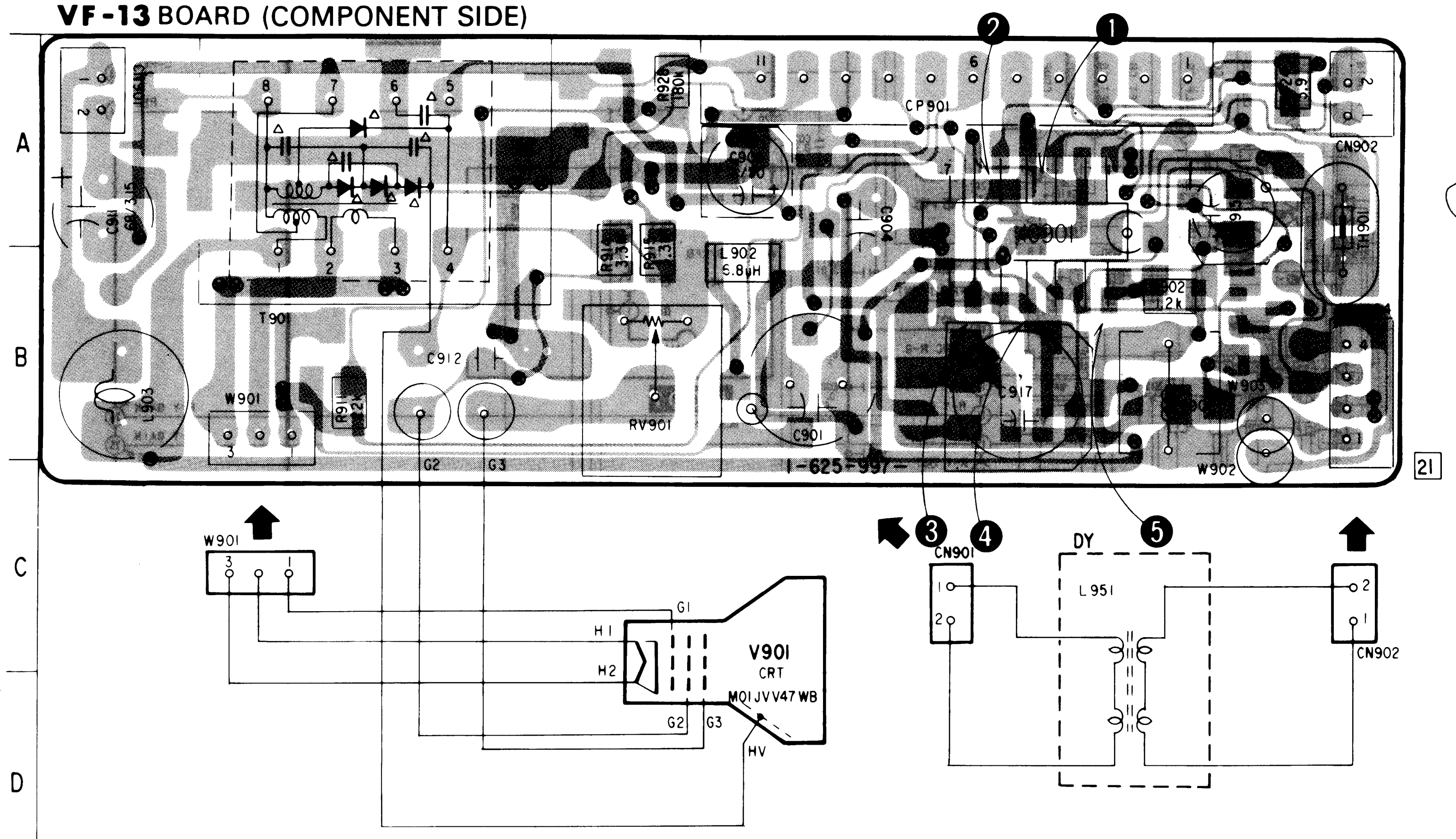

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
TO PA-13 BOARD
CN191 (WHT)
GRY LI 3V
GRY GND
(See page 112.)
CHASSIS
S191 TITLE 1
S192 TITLE 2
SUPERIMPOSE
S193 MEMORY
S194 COLOR
S190 AUTO LOCK
MANU AUTO
W190
TO SS-86 BOARD CN007
(See page 116.)
VDD
T1
T2
MEMO
COLOR
LINCS POWER
AUTO LOCK SW
EVER 5V
CLK
DATA TO SLVE
DATA TO MSTR
SLVE RESET
CS
STB
REF V
CC DOWN
CAM STBY
CAM REC
CAM STB
SS GND
CAM MODE
VTR MODE
K OUT 2
K OUT 1
K OUT 0
K IN 2
K IN 1
K IN 0
K OUT 3
K IN 3
K IN 4
K OUT 0
K OUT 2
K OUT 3
Q164 2SA1576
Q165 2SK209Y
– EVER 5V / LI3V SWITCH –
D161 RD4.7MB2
Q166 2SC4081
EVER 5V DETECT
Q167 FMSIFE
LITHIUM BATTERY DETECT
Q169 DTA144EU
INVERTER
Q160 2SA1576
INITIAL RESET
Q168 2SC4081
LITHIUM BATTERY DETECT
Q161 2SA1576
INITIAL RESET
D160 MA159
Q163 2SA1576
INITIAL RESET
Q191 2SA1576
SYSTEMCLOCK FREQUENCY SWITCH
IC190
μPD7503G-A49-12
MODE CONTROL
CS
LINCS POWER
CC DOWN
LI BATT
CL 2
VDD
CL 1
RESET
REF V
S0
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
S13
S14
S15
S16
S17
S18
S19
S20
S21
S22
S23
K IN 4
N.C
CAMSTB
CAMSTB
SLVE RESET
DATA TO MSTR
DATA TO SLVE
CLK
K OUT 3
K OUT 2
K OUT 1
K OUT 0
K IN 3
K IN 2
K IN 1
K IN 0
VTR MODE
CAM MODE
CAM REC SW
CAM STBY
X2
X1
VSS
VLC 3
VLC 2
VLC 1
VDD
COM 3
COM 2
COM 1
COM 0
X190 32.768KHz
CLOCK
IC191
S-8054ALB
VOLTAGE DETECT
S196 BACK LIGHT
SVP
S195 FOCUS
S197 SHUTTER SPEED
D190 RD6.2MB1
Q190 2SC4396
DISPLAY SWITCH
no mark : REC/PB mode
* : Impossible to measure the voltage at the marked points.
FC-16 BOARD
CN192
FD-6 BOARD
S150 ZERO MEM
S151 EDITSEARCH –
S152 DATE (+)
S153 RESET
S154 EDITSEARCH +
S155 TIME(NEXT)
CN150
FV-1 BOARD
S161
S162
S163
S164
S165 FF
S166
S168 REW
S160 POWER
PLAYER OFF CAMERA
CN160
SVP
EJ-4 BOARD
S169 EJECT
W162
BLU
GRY
K IN 0
K OUT 0
W161
LCD
COUNTER
ZERO MEM
AM
PM
88·88·88
SP
LP

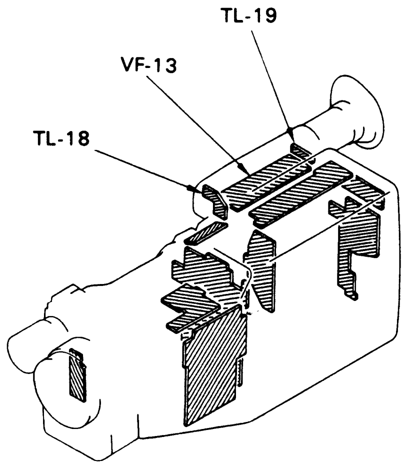
FV-1
EJ-4

VF-13 (VIEWFINDER), TL-18 (LED), TL-19 (LED) PRINTED WIRING BOARDS

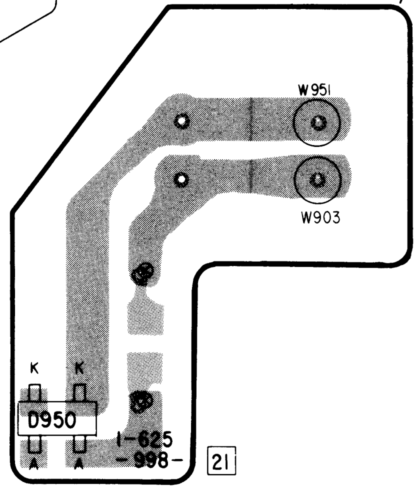
– Ref. No. VF-13, TL-18, TL-19 BOARDS: 6,000 series –

VF-13 BOARD (COMPONENT SIDE)

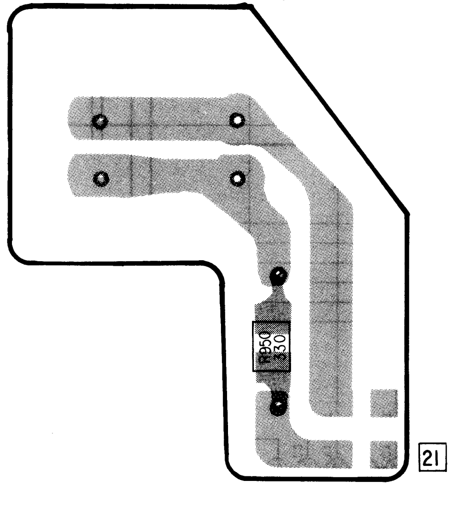

A
B
C
D
CN902
IC901
CP901
L902
6.8μH
T901
C912
RV901
C901
C917
W901
W902
W903
G2
G3
1-625-997-
21
W901
V901
CRT
M01JVV47WB
H1
H2
G1
G2
G3
HV
CN901
DY
L951
CN902
❶
❷
❸
❹
❺


TL-19
VF-13
TL-18

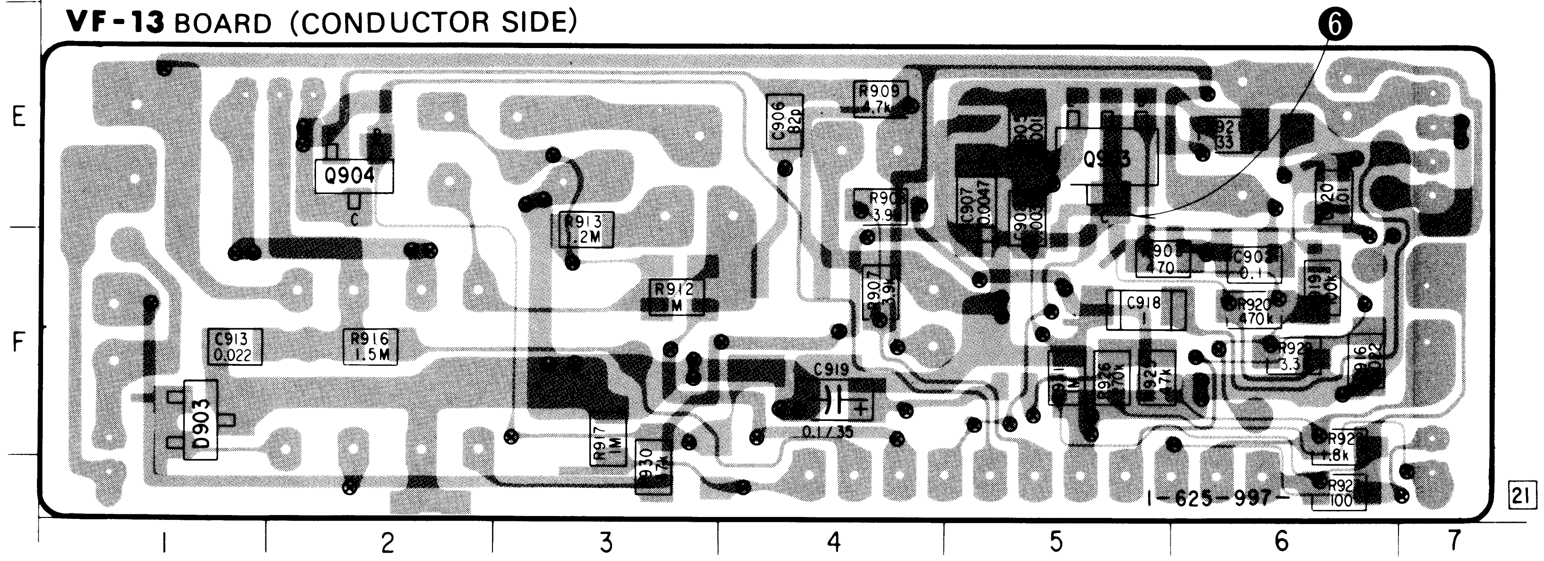
TL-18 BOARD (COMPONENT SIDE)


W951
W903
K
D950
A
1-625
-998-
21

TL-18 BOARD (CONDUCTOR SIDE)

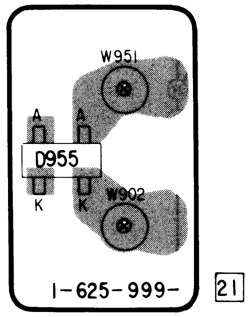


VF-13 BOARD (CONDUCTOR SIDE)


❻
E
F
Q904
D903
C913
0.022
R916
1.5M
R913
1.2M
R912
R917
1M
C906
82p
R909
4.7k
R908
3.9k
R907
3.9k
C907
0.0047
C919
0.1/35
Q903
C918
C902
0.1
R920
470k
R923
3.3
R924
1.8k
R925
100
1-625-997-
21
1
2
3
4
5
6
7

CN901	A-1
CN902	A-7
D903	F-1
IC901	A-5
Q903	E-5
Q904	E-2
RV901	B-3

TL-19 BOARD (COMPONENT SIDE)

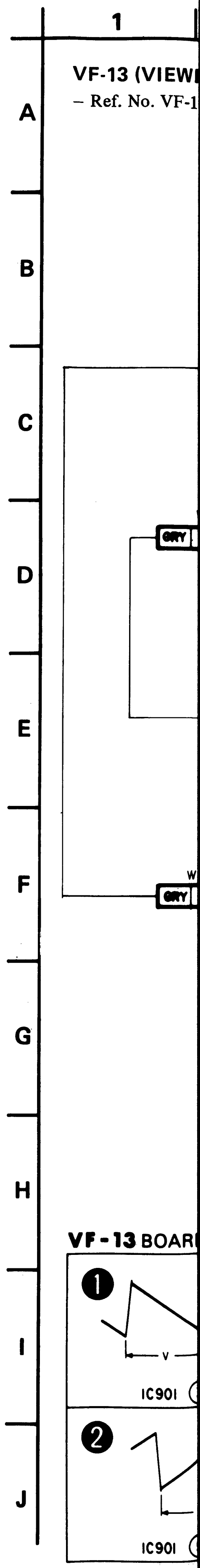

W951
A
D955
K
W902
1-625-999-
21

Note:

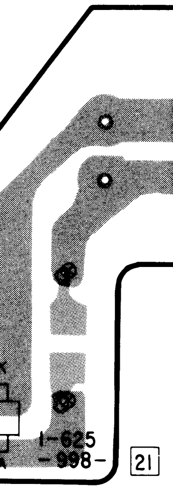
- ⊗ : Through hole.
- ▨ : Pattern of the rear side.

Caution:

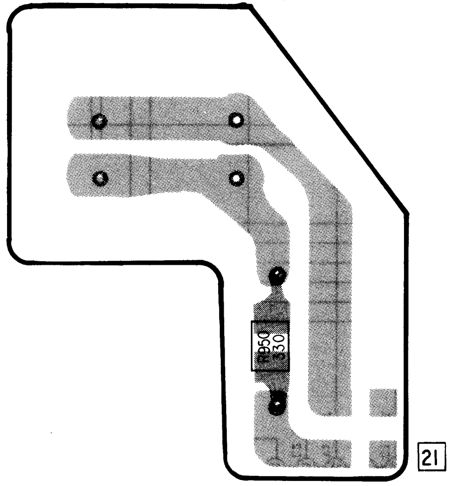
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.


1
VF-13 (VIEW
– Ref. No. VF-1
A
B
C
D
E
F
G
H
I
J
GRY
GRY
VF-13 BOAR
❶
IC901
❷
IC901

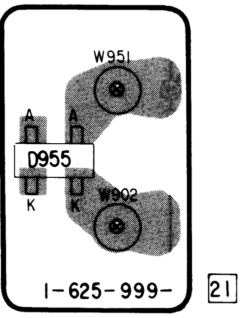
TL-18 BOARD (COMPONENT SIDE)


W951
W903
1-625
-998-
21

TL-18 BOARD (CONDUCTOR SIDE)



19 BOARD (COMPONENT SIDE)

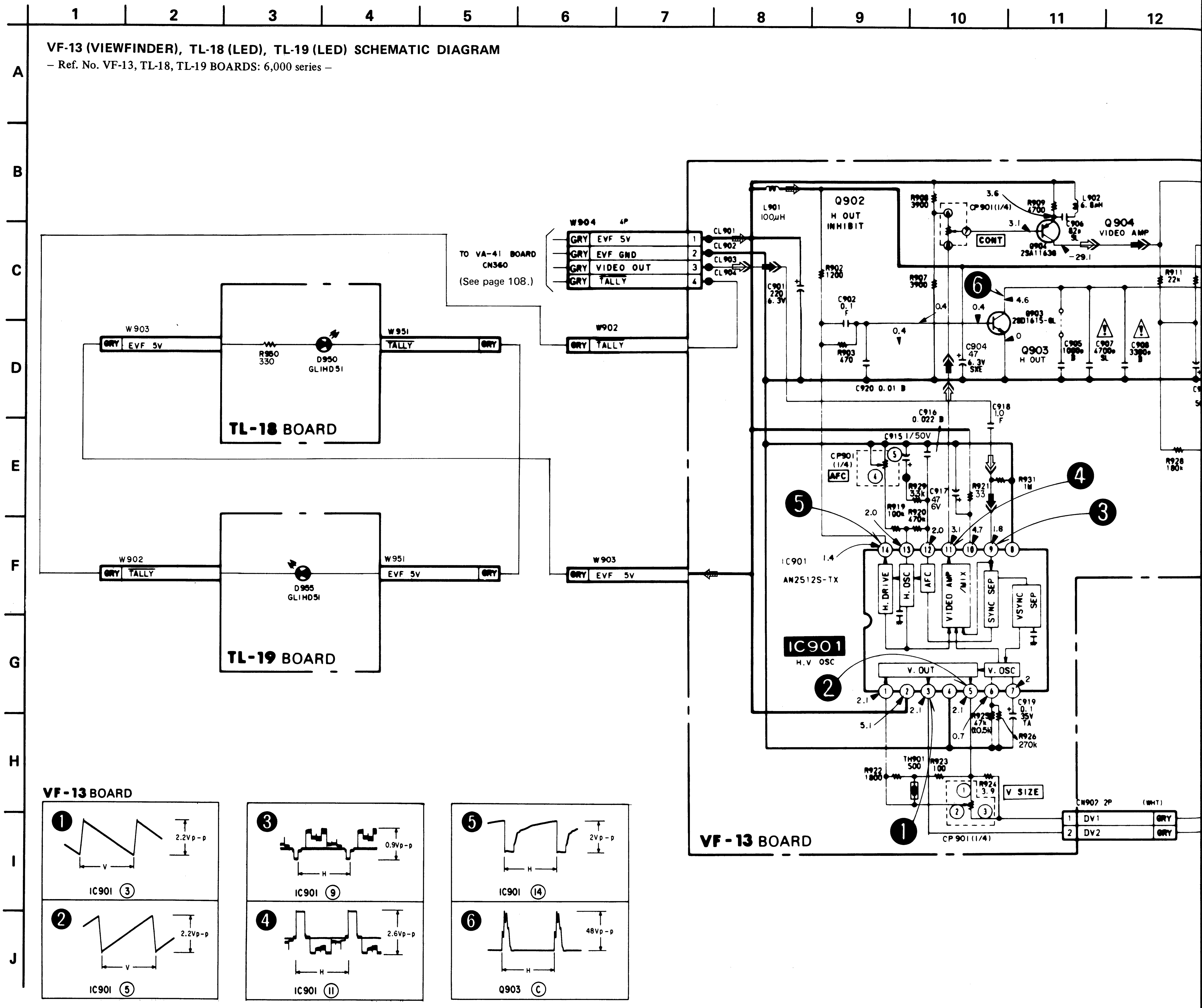

W951
A
D955
K
W902
A
K
1-625-999-
21

Note:

- ⊗ : Through hole.
- ▨ : Pattern of the rear side.

Caution:

Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.



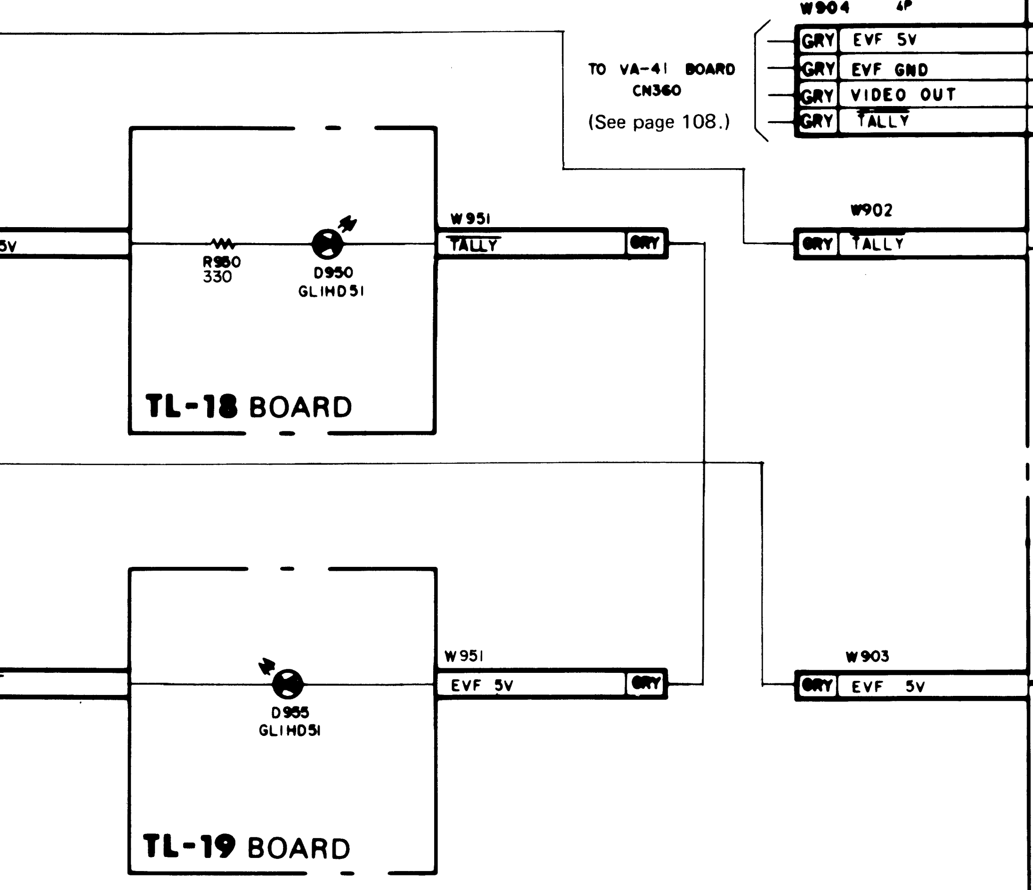
VF-13 (VIEWFINDER), TL-18 (LED), TL-19 (LED) SCHEMATIC DIAGRAM

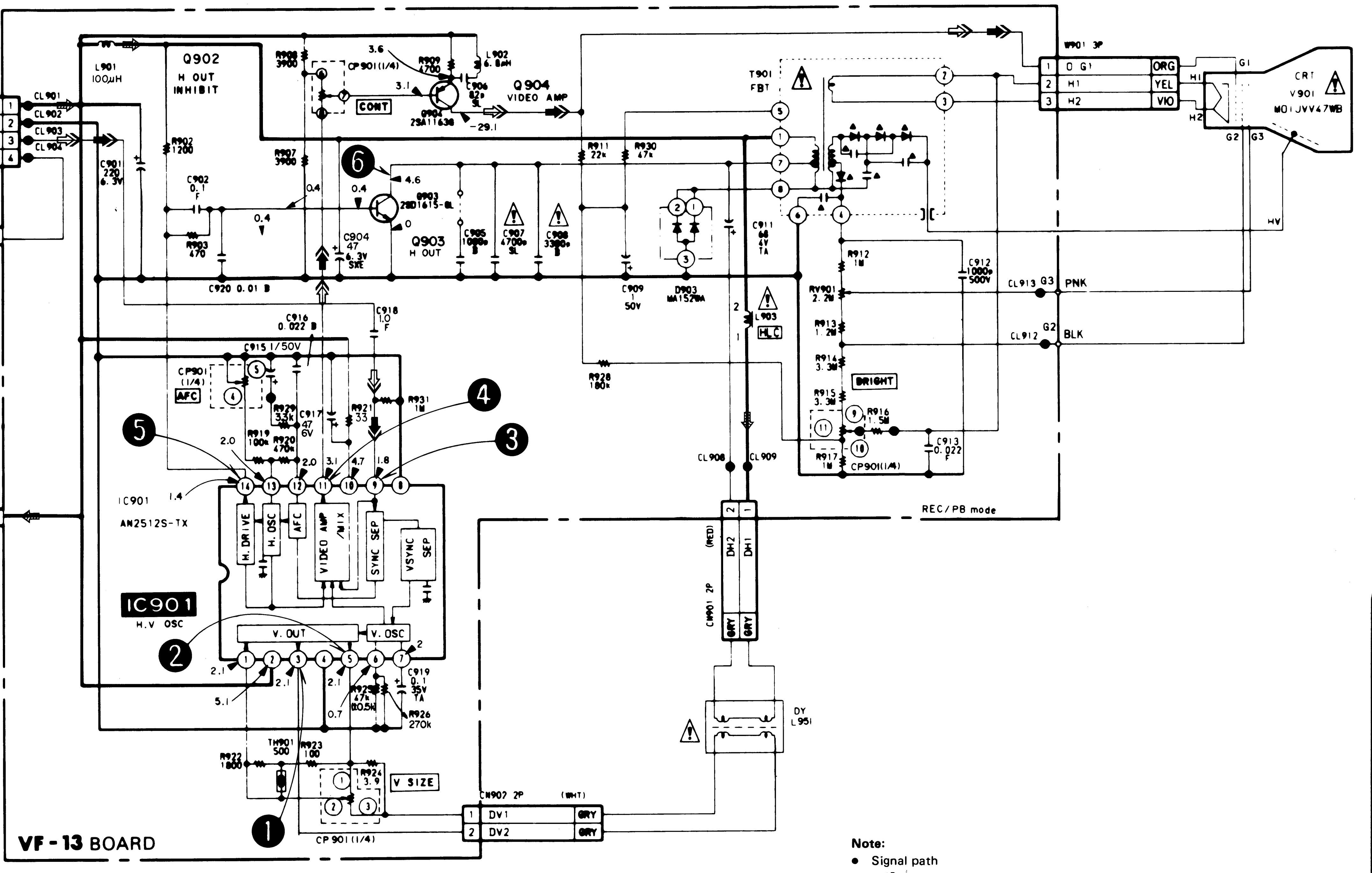
– Ref. No. VF-13, TL-18, TL-19 BOARDS: 6,000 series –

1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H
I
J
TO VA-41 BOARD CN360
(See page 108.)
W904 4P
GRY EVF 5V
GRY EVF GND
GRY VIDEO OUT
GRY TALLY
CL901
CL902
CL903
CL904
W902
GRY TALLY
W903
GRY EVF 5V
W903
EVF 5V
R950 330
D950 GL1HD51
W951
TALLY
GRY
TL-18 BOARD
W902
GRY TALLY
D955 GL1HD51
W951
EVF 5V
GRY
TL-19 BOARD
L901 100μH
Q902
H OUT INHIBIT
R902 1200
C901 220 6.3V
C902 0.1 F
R903 470
C920 0.01 B
R908 3900
R907 3900
CP901(1/4)
CONT
3.6
3.1
R909 4700
L902 6.8μH
C906 82p SL
Q904 2SA1163B
-29.1
Q904
VIDEO AMP
R911 22k
4.6
0.4
0.4
0.4
0
Q903 2SD1615-GL
Q903
H OUT
C904 47 6.3V SXE
C905 1000p B
C907 4700p SL
C908 3300p B
R928 180k
C916 0.022 B
C918 1.0 F
C915 1/50V
CP901 (1/4)
AFC
R929 3.3k
C917 47 6V
R921 33
R931 1M
R919 100k
R920 470k
2.0
2.0
3.1
4.7
1.8
1.4
IC901
AN2512S-TX
H. DRIVE
H. OSC
AFC
VIDEO AMP /MIX
SYNC SEP
VSYNC SEP
IC901
H.V OSC
V. OUT
V. OSC
2
2.1
2.1
5.1
2.1
0.7
R925 47k (10.5k)
C919 0.1 35V TA
R926 270k
TH901 500
R923 100
R922 1800
R924 3.9
V SIZE
CP901(1/4)
CN902 2P (WHT)
DV1 GRY
DV2 GRY
VF-13 BOARD
VF-13 BOARD
❶
2.2Vp-p
V
IC901 ③
❷
2.2Vp-p
V
IC901 ⑤
❸
0.9Vp-p
H
IC901 ⑨
❹
2.6Vp-p
H
IC901 ⑪
❺
2Vp-p
H
IC901 ⑭
❻
48Vp-p
H
Q903 Ⓒ

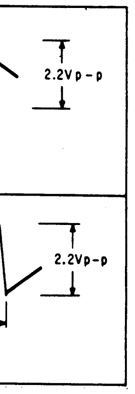
DER), TL-18 (LED), TL-19 (LED) SCHEMATIC DIAGRAM

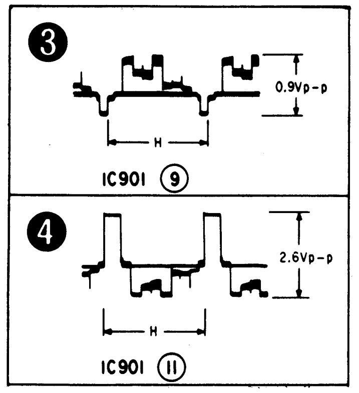
-18, TL-19 BOARDS: 6,000 series –

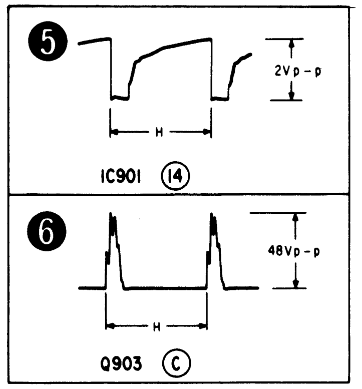

W904 4P
GRY EVF 5V
GRY EVF GND
GRY VIDEO OUT
GRY TALLY
TO VA-41 BOARD CN360
(See page 108.)
5V
R950 330
D950 GL1HD51
W951
TALLY
GRY
TL-18 BOARD
W902
GRY TALLY
D955 GL1HD51
W951
EVF 5V
GRY
TL-19 BOARD
W903
GRY EVF 5V


CL901
CL902
CL903
CL904
L901 100μH
Q902
H OUT INHIBIT
R902 1200
C901 220 6.3V
C902 0.1 F
R903 470
C920 0.01 B
R908 3900
R907 3900
CP901(1/4)
CONT
3.6
3.1
R909 4700
L902 6.8mH
C906 82p SL
Q904 2SA1163G
-29.1
Q904 VIDEO AMP
6
4.6
0.4
0.4
0.4
Q903 2SD1615-GL
0
C904 47 6.3V SXE
Q903 H OUT
C905 1000p B
C907 4700p SL
C908 3300p B
R911 22k
R930 47k
C909 1 50V
D903 MA152WA
C911 68 4V TA
T901 FBT
L903
HLC
R928 180k
C916 0.022 B
C918 1.0 F
C915 1/50V
CP901 (1/4)
AFC
R929 3.3k
C917 47 6V
R921 33
R931 1M
R919 100k
R920 470k
5
4
3
2.0
2.0
3.1
4.7
1.8
1.4
IC901
AN2512S-TX
H. DRIVE
H. OSC
AFC
VIDEO AMP /MIX
SYNC SEP
VSYNC SEP
IC901
H.V OSC
V. OUT
V. OSC
2
2.1
2.1
5.1
2.1
0.7
2
C919 0.1 35V TA
R925 47k (0.5W)
R926 270k
TH901 500
R923 100
R922 1800
R924 3.9
V SIZE
1
CP901(1/4)
VF-13 BOARD
CN902 2P (WHT)
DV1 GRY
DV2 GRY
DY L951
CN901 2P (RED)
DH2
DH1
GRY
CL908
CL909
W901 3P
O G1 ORG
H1 YEL
H2 VIO
CRT V901 M01JVV47WB
G1
H1
H2
G2
G3
HV
R912 1M
C912 1000p 500V
CL913 G3 PNK
CL912 G2 BLK
RV901 2.2M
R913 1.2M
R914 3.3M
BRIGHT
R915 3.3M
R916 1.5M
R917 1M
C913 0.022 F
CP901(1/4)
REC/PB mode

Note:
- Signal path
  - ➡ : REC Y/CHROMA Signal
  - ⇨ : PB Y/CHROMA Signal

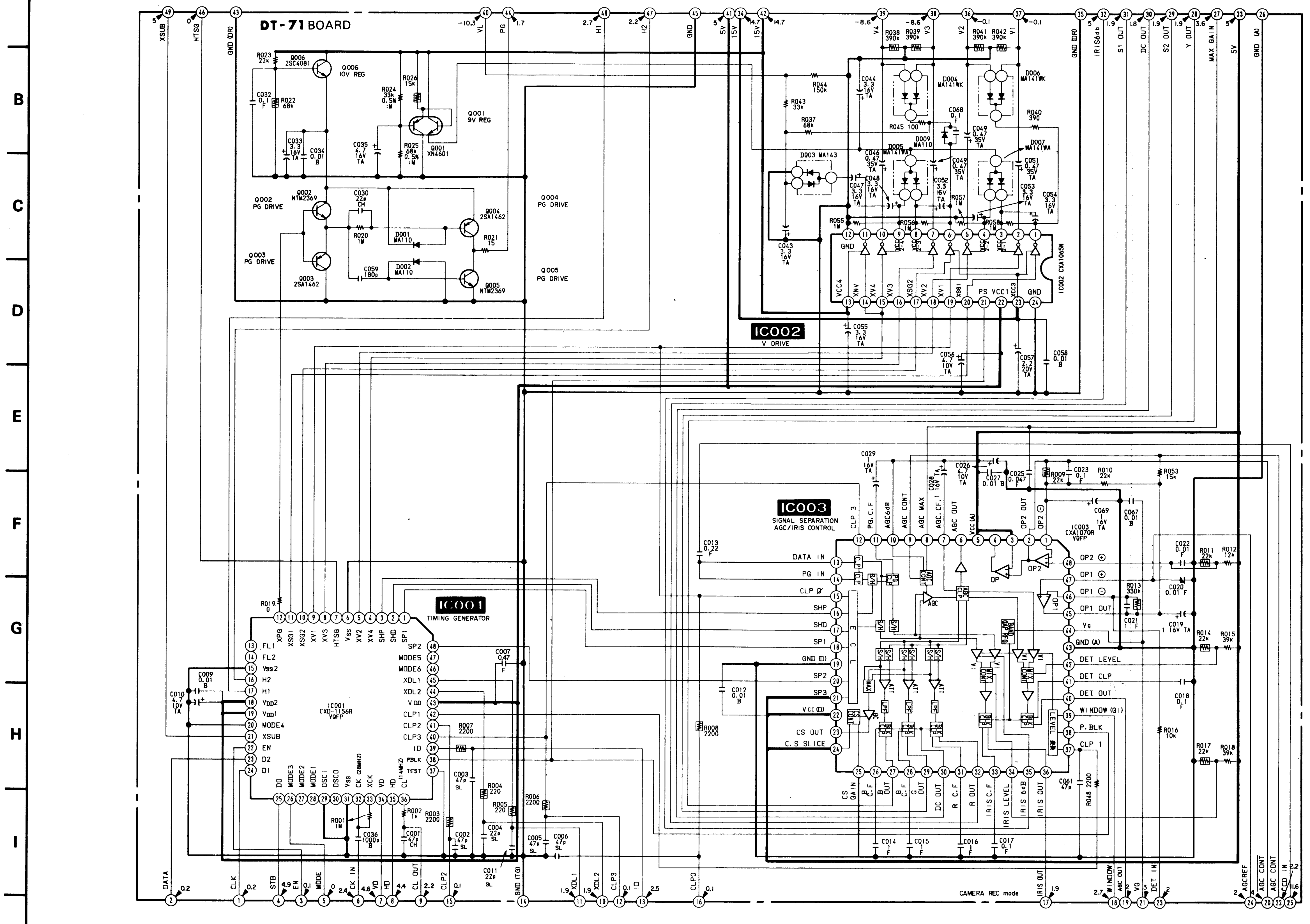






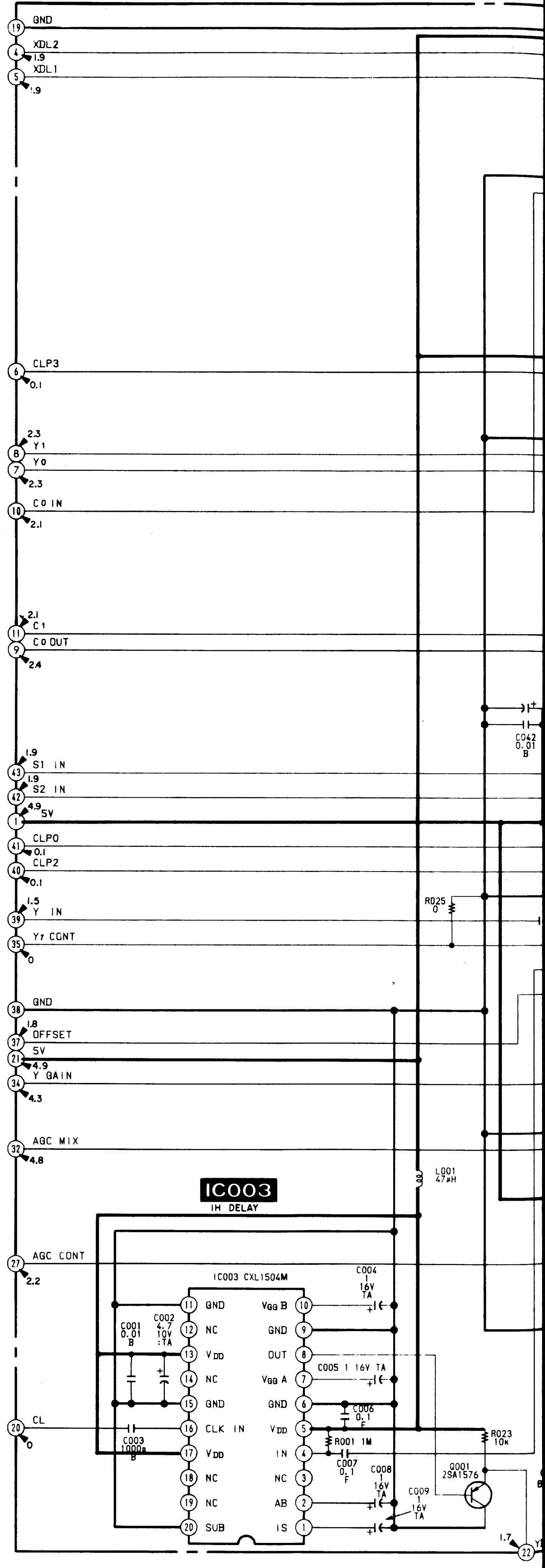
4-3. HYBRID IC SCHEMATIC DIAGRAMS; DT-71, MX-7, AND PR-20 BOARDS

- DT-71 BOARD is replaced as a block, so the PRINTED WIRING BOARD of it is omitted.



DT-71 BOARD
IC002
V DRIVE
IC002 CXA1065M
IC003
SIGNAL SEPARATION
AGC/IRIS CONTROL
IC003 CXA1070R VQFP
IC001
TIMING GENERATOR
IC001 CXD-1156R VQFP
Q001 9V REG
Q001 XN4601
Q006 2SC4081
Q006 10V REG
Q002 PG DRIVE
Q002 NTM2369
Q003 PG DRIVE
Q003 2SA1462
Q004 PG DRIVE
Q004 2SA1462
Q005 PG DRIVE
Q005 NTM2369
D001 MA110
D002 MA110
D003 MA143
D004 MA141WK
D005 MA141WA
D006 MA141WK
D007 MA141WA
D009 MA110
XSUB
HTSG
GND (DR)
VL
PG
H1
H2
GND
5V
15V
V4
V3
V2
V1
IRIS6dB
S1 OUT
DC OUT
S2 OUT
Y OUT
MAX GAIN
GND (A)
DATA IN
PG IN
CLP Ø
SHP
SHD
SP1
GND (D)
SP2
SP3
VCC (D)
CS OUT
C.S SLICE
OP2 ⊕
OP1 ⊕
OP1 ⊖
OP1 OUT
Vq
GND (A)
DET LEVEL
DET CLP
DET OUT
WINDOW (Q1)
P.BLK
CLP 1
DATA
CLK
STB
EN
MODE
CK IN
HD
VD
CL OUT
CLP2
GND (TG)
XDL1
XDL2
CLP3
ID
CLP0
IRIS OUT
WINDOW
AGC OUT
VG
DET IN
AGCREF
AGC CONT
CCD IN
CAMERA REC mode

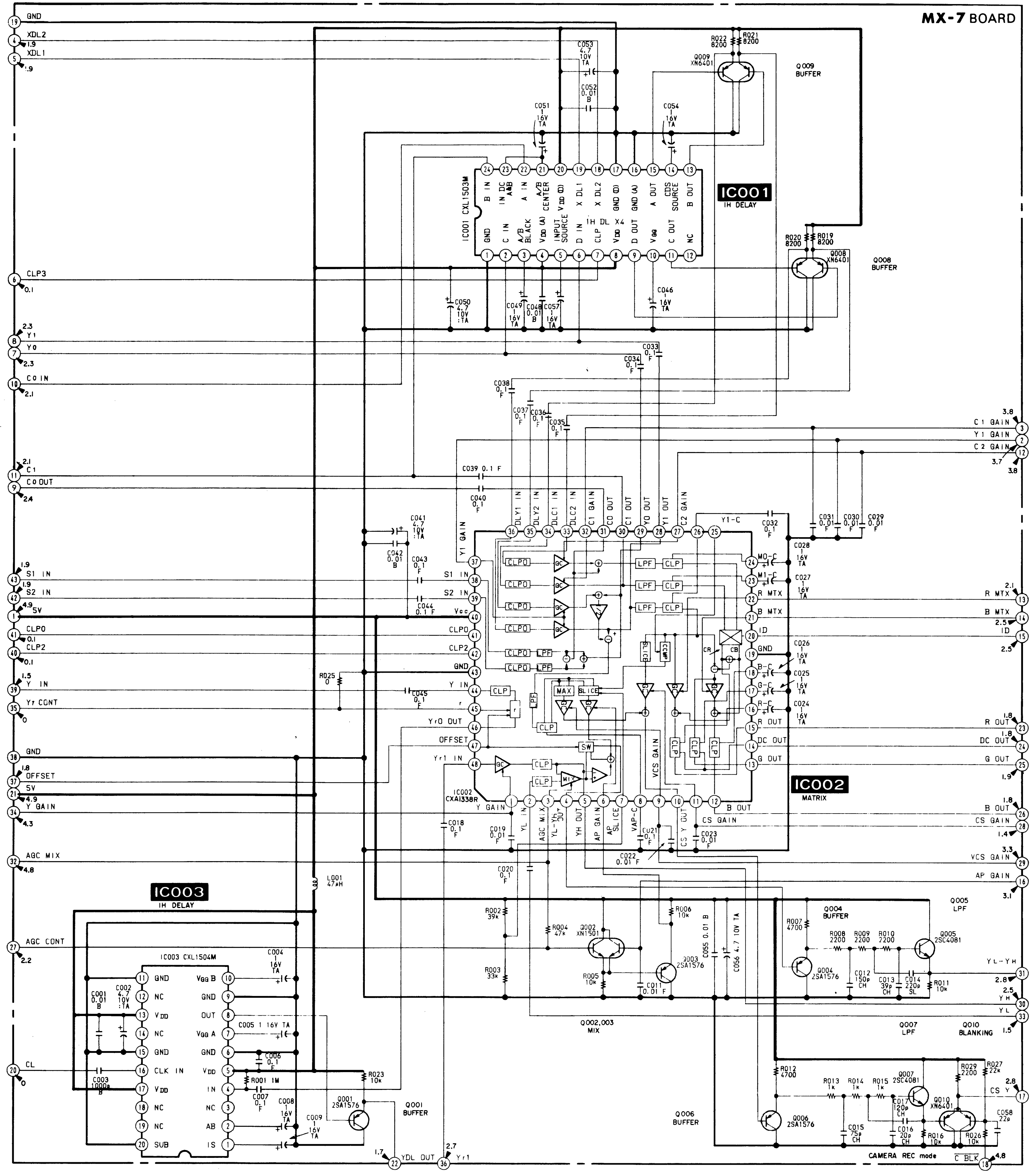
- MX-7 BOARD is replaced as a block, so the PRINTED W



GND
XDL2
XDL1
CLP3
Y1
Y0
C0 IN
C1
C0 OUT
S1 IN
S2 IN
5V
CLP0
CLP2
Y IN
Yr CONT
GND
OFFSET
5V
Y GAIN
AGC MIX
AGC CONT
CL
IC003
1H DELAY
IC003 CXL1504M
Q001 2SA1576
L001 47μH

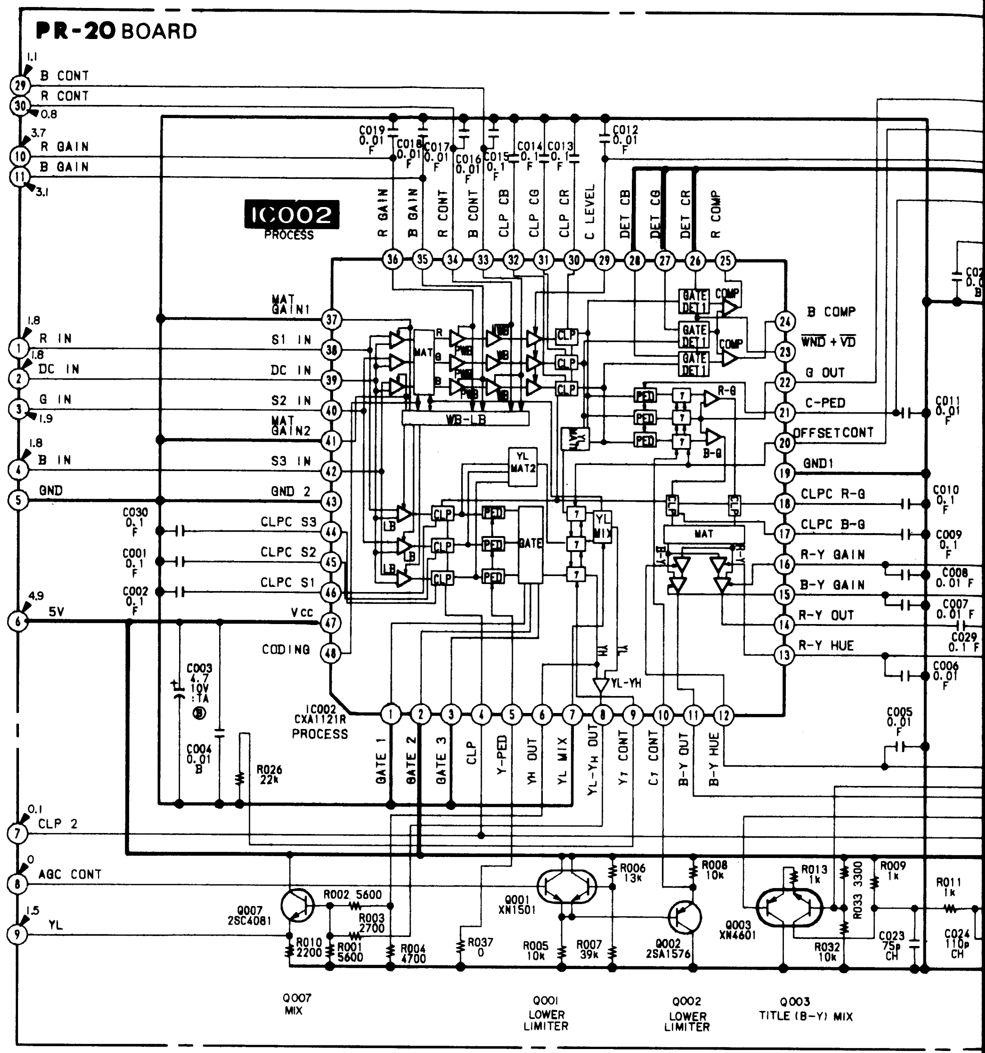
- **MX-7 BOARD is replaced as a block, so the PRINTED WIRING BOARD of it is omitted.**

AGC CONT
CCD IN
2.2
1.6
20
22
25



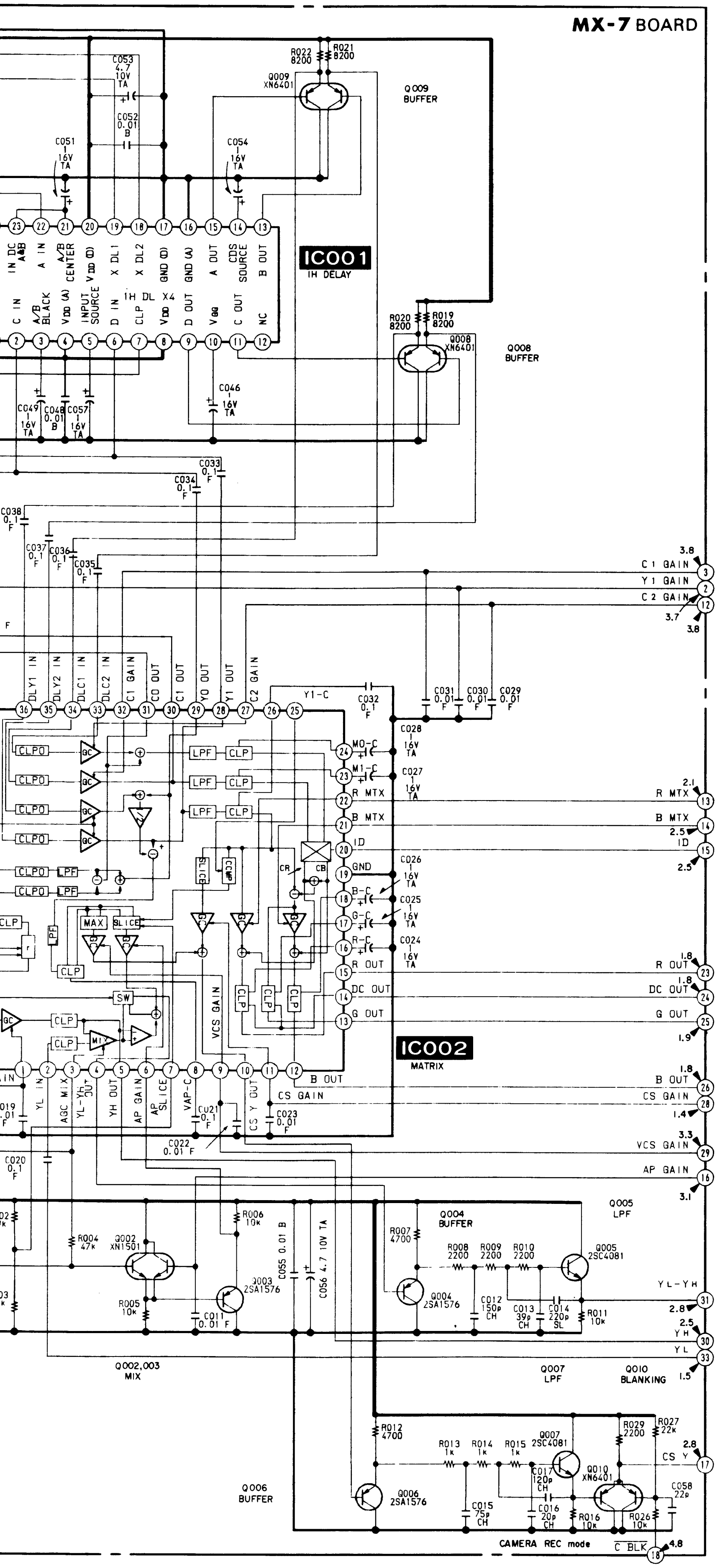
MX-7 BOARD
GND
XDL2
XDL1
CLP3
Y1
Y0
C0 IN
C1
C0 OUT
S1 IN
S2 IN
5V
CLP0
CLP2
Y IN
Yr CONT
OFFSET
Y GAIN
AGC MIX
AGC CONT
CL
IC001
1H DELAY
IC001 CXL1503M
IC002
MATRIX
IC002 CXA1338R
IC003
1H DELAY
IC003 CXL1504M
Q009 BUFFER
Q008 BUFFER
Q001 BUFFER
Q002,003 MIX
Q004 BUFFER
Q005 LPF
Q006 BUFFER
Q007 LPF
Q010 BLANKING
L001 47μH
C1 GAIN
Y1 GAIN
C2 GAIN
R MTX
B MTX
ID
R OUT
DC OUT
G OUT
B OUT
CS GAIN
VCS GAIN
AP GAIN
YL-YH
YH
YL
CS Y
C BLK
YDL OUT
Yr1
CAMERA REC mode

- **PR-20 BOARD is replaced as a block, so the PRINTED WIRING BOARD of it is omitt**

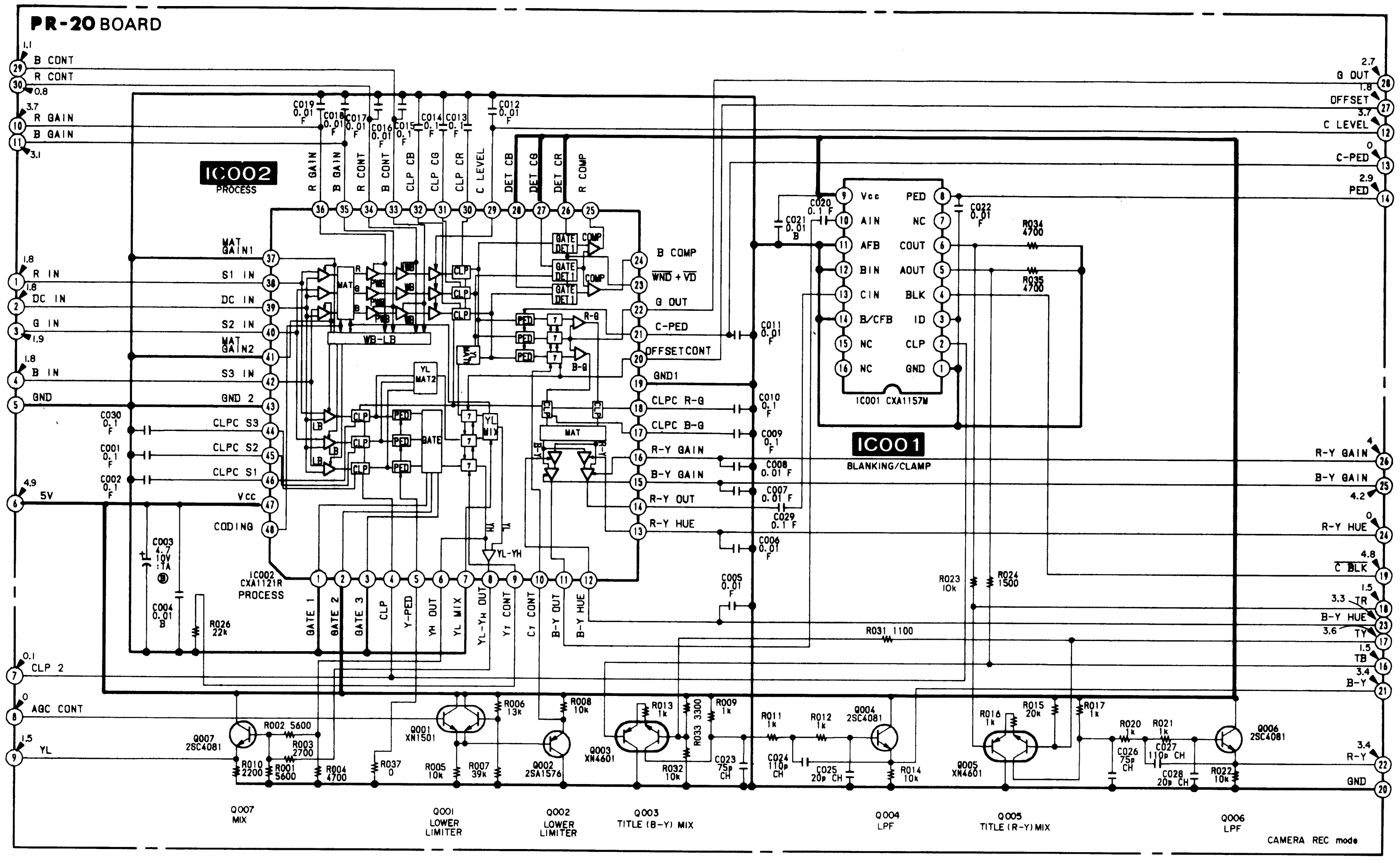


PR-20 BOARD
B CONT
R CONT
R GAIN
B GAIN
R IN
DC IN
G IN
B IN
GND
5V
CLP 2
AGC CONT
YL
IC002
PROCESS
IC002 CXA1121R PROCESS
B COMP
WND + VD
G OUT
C-PED
OFFSET CONT
GND1
CLPC R-G
CLPC B-G
R-Y GAIN
B-Y GAIN
R-Y OUT
R-Y HUE
Q007 MIX
Q001 LOWER LIMITER
Q002 LOWER LIMITER
Q003 TITLE (B-Y) MIX

RD of it is omitted.

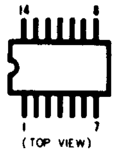

MX-7 BOARD
IC001
1H DELAY
IC002
MATRIX
Q009 BUFFER
Q008 BUFFER
Q004 BUFFER
Q005 LPF
Q002,003 MIX
Q007 LPF
Q010 BLANKING
Q006 BUFFER
CAMERA REC mode

- PR-20 BOARD is replaced as a block, so the PRINTED WIRING BOARD of it is omitted.

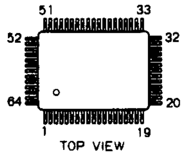

PR-20 BOARD
IC002
PROCESS
IC002 CXA1121R PROCESS
IC001
BLANKING/CLAMP
IC001 CXA1157M
Q007 MIX
Q001 LOWER LIMITER
Q002 LOWER LIMITER
Q003 TITLE (B-Y) MIX
Q004 LPF
Q005 TITLE (R-Y) MIX
Q006 LPF
CAMERA REC mode

4-4. SEMICONDUCTORS

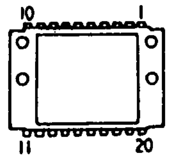
AN2512S
TC40H008F
μPD4066BG


14
8
1
7
(TOP VIEW)

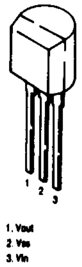
CXA1200AQ
CXA1200BQ
MB670493
μPD7503G-A80-12
μPD78112GF-509 3BE


51
33
52
32
64
20
1
19
TOP VIEW

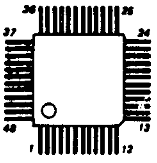
IU027CK-AK



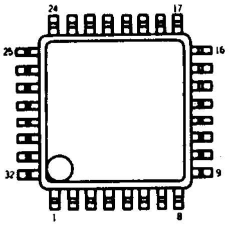
S-81350AG


1
2
3
1. Vout
2. Vss
3. Vin

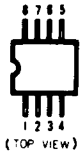
CXA1072R
CXA1202R


36
25
37
24
48
13
1
12

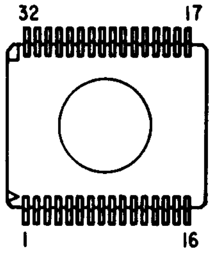
CXA1201Q


24
17
25
16
32
9
1
8

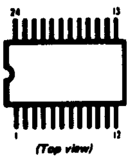
LA7293
MC34182M
NJM2233AM
NJM3414M
μPC358G2
μPC393G2


8 7 6 5
1 2 3 4
(TOP VIEW)

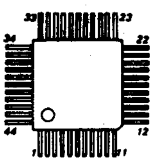
SBX1505-21



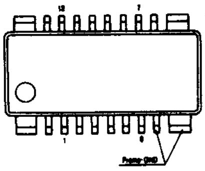
CX20114
CXA1203N


24
13
1
12
(Top view)

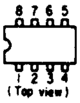
CXA1204Q
μPD7507HG-532-22


33
23
34
22
44
12
1
11

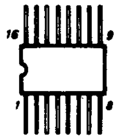
LB1631M


12
7
1
6
Frame-GND

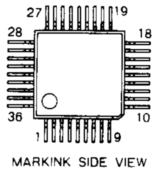
μPC311G2


8 7 6 5
1 2 3 4
(Top view)

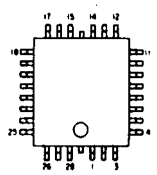
CX20115A
μPD6142G-101



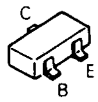
CXD1159Q


27
19
28
18
36
10
1
9
MARKINK SIDE VIEW

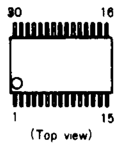
MC146805F2FPSC8253-3F


17
15
14
12
10
11
25
4
26
20
1
3

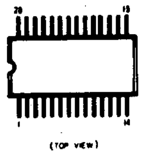
2SA812
2SA1163
2SA1226
2SA1576R
2SA1611
2SA1676
2SA1677
2SC2223-F13
2SC3396
2SC4081R
2SC4177
2SC4396
2SC4397
DTA124EU
DTA143EU
DTA144EU
DTC124EU
DTC144EU
DTC144WU



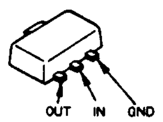
CXA1127MTP-1
CXL1502M


30
16
1
15
(Top view)

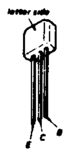
CXK58256M-15LL


28
15
1
14
(TOP VIEW)

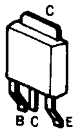
S-8054ALB-LM-S



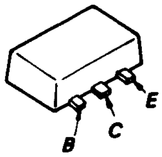
2SA1175


letter side
E
C
B

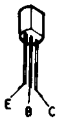
2SA1341



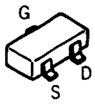
2SA1416-S-TD
2SB798
2SB1121
2SC3646-S-TD
2SD1615



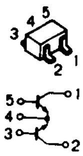
2SB926



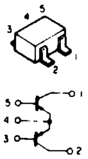
2SK94-X2
2SK160-K2
2SK300



FMG2
FMW1
XN1213
XN1501


5
4
3
1
2
5
1
4
3
2

FMS1FE
XN1113


5
4
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2
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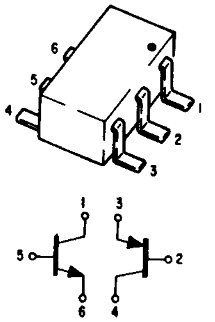
1
4
3
2

XN4601


6
5
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2
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1
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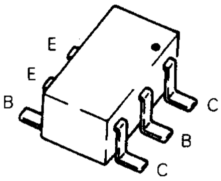
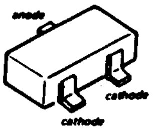
5
2
6
4

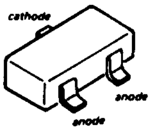
XN6401



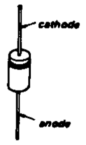
1S2835
MA152WA


anode
cathode
cathode

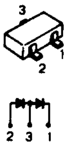
1S2837
MA141WA


cathode
anode
anode

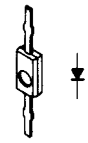
1SS119
RD2.7EB2
RD2.7ES-B2


cathode
anode

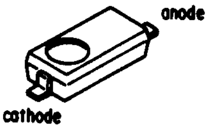
1SS123



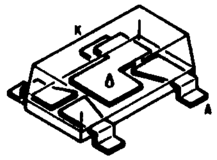
1T32



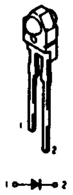
1T33C-01


anode
cathode

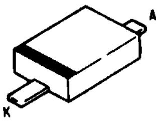
GL1HD51



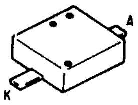
GL452S



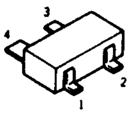
MA110



MA111

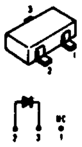


MA159

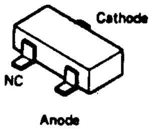


1. CATHODE
2. CATHODE
3. ANODE
4. ANODE

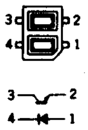
RD4.7M-B2
RD6.2M-B1
RD9.1M-B1



SB05-05-CP


Cathode
NC
Anode

TLP907-0



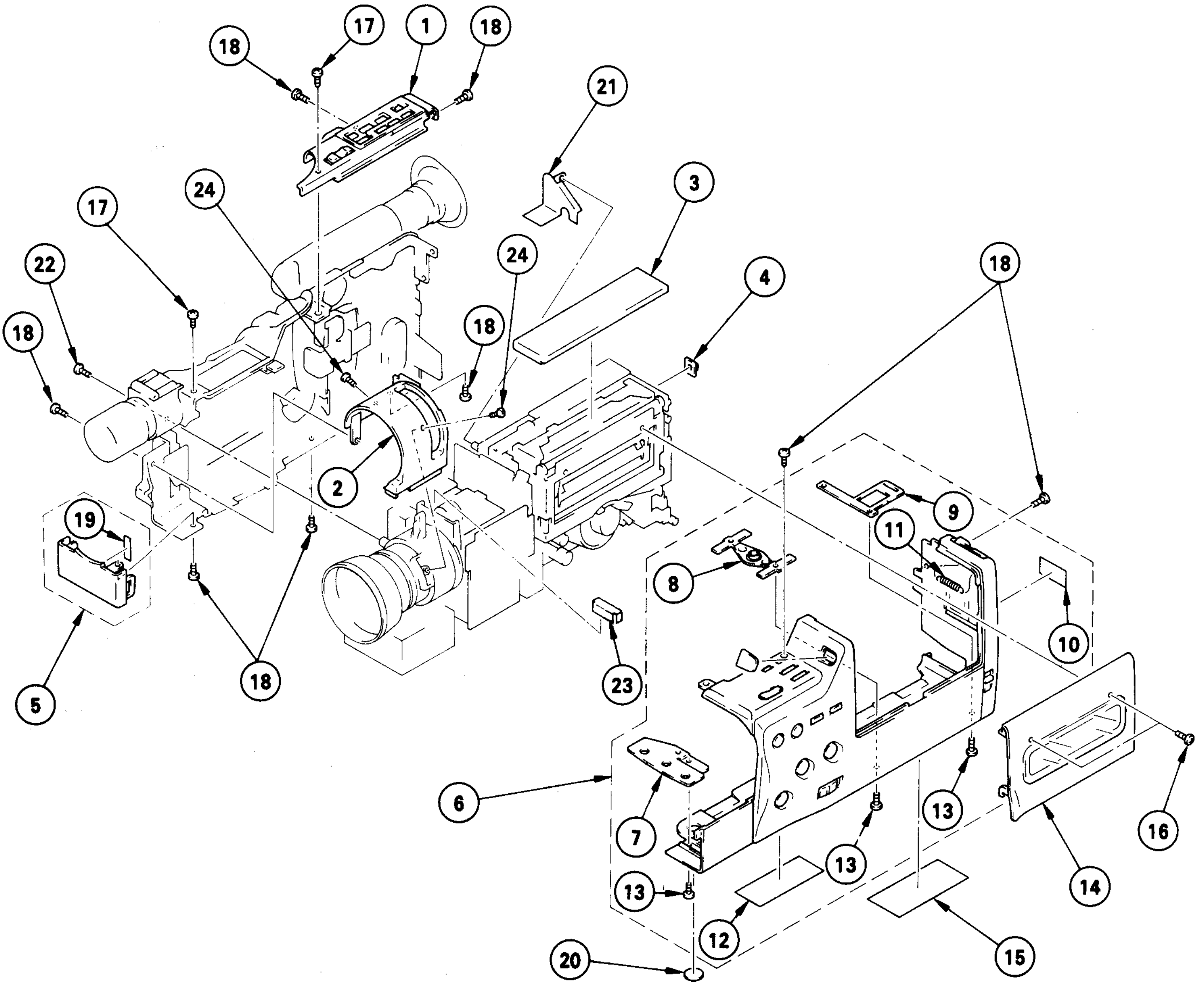
SECTION 5
EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

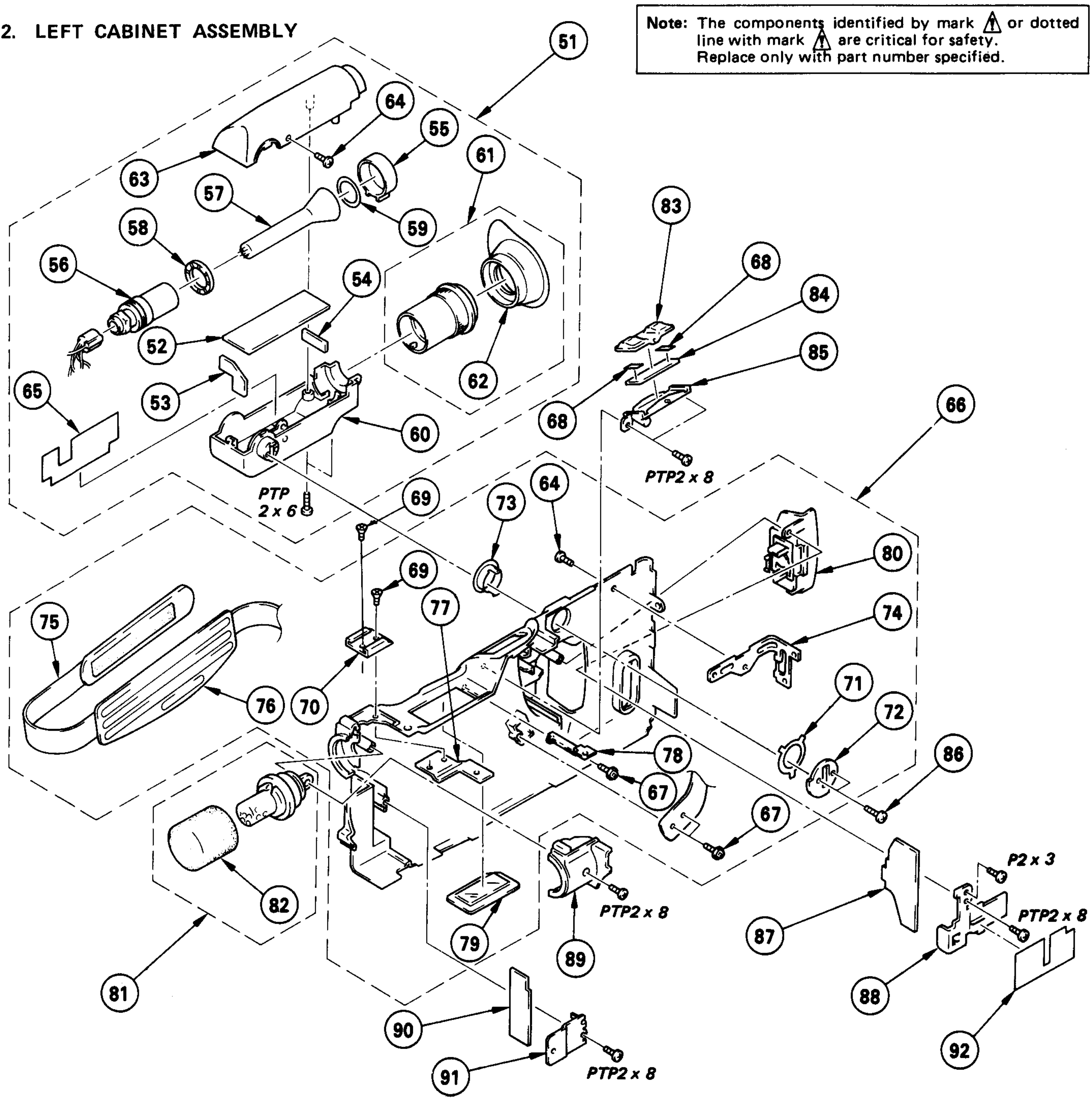
5-1. RIGHT CABINET ASSEMBLY



No.	Part No.	Description	Remark
1	X-3725-117-1	PANEL ASSY, VTR	
2	X-3724-552-1	COVER ASSY, LENS	
3	X-3725-141-1	LID ASSY, LS	
4	3-724-593-01	KEY TOP	
5	X-3724-549-1	PLATE ASSY, LIGHT TRANSMISSION	19
6	X-3725-140-1	CABINET (R) ASSY	7-13
7	*3-726-534-01	JOINT (LOWER)	
8	3-724-507-01	SCREW, TRIPOD	
9	*3-724-509-01	PLATE (LOWER), STRAP	
10	*3-719-683-01	LABEL, BATTERY FITTING	
11	3-669-440-01	SPRING, TENSION	
12	*3-704-235-01	LABEL, CAUTION (UK MODEL)	
13	3-719-381-01	SCREW (M2X4)	
14	X-3725-118-1	LID ASSY, CASSETTE	
15	*3-728-694-01	LABEL, MODEL NUMBER (AEP MODEL)	
	*3-728-679-01	LABEL, MODEL NUMBER (UK/AUS/E MODEL)	
16	3-713-791-01	SCREW (M1.7X5), TAPPING, P2	
17	3-713-786-41	SCREW (M2X8)	
18	3-719-381-01	SCREW (M2X4)	
19	*2-532-810-00	CUSHION, 15X5X0.3	
20	3-725-181-01	CAP, LOWER, AF	
21	*3-725-119-01	RETAINER, FPC	
22	3-713-790-41	SCREW (M2X10), TAPPING, P3	
23	3-728-610-03	PLATE, LIGHT INTERCEPTION	
24	3-713-791-31	SCREW (M1.7X6), TAPPING, P2	

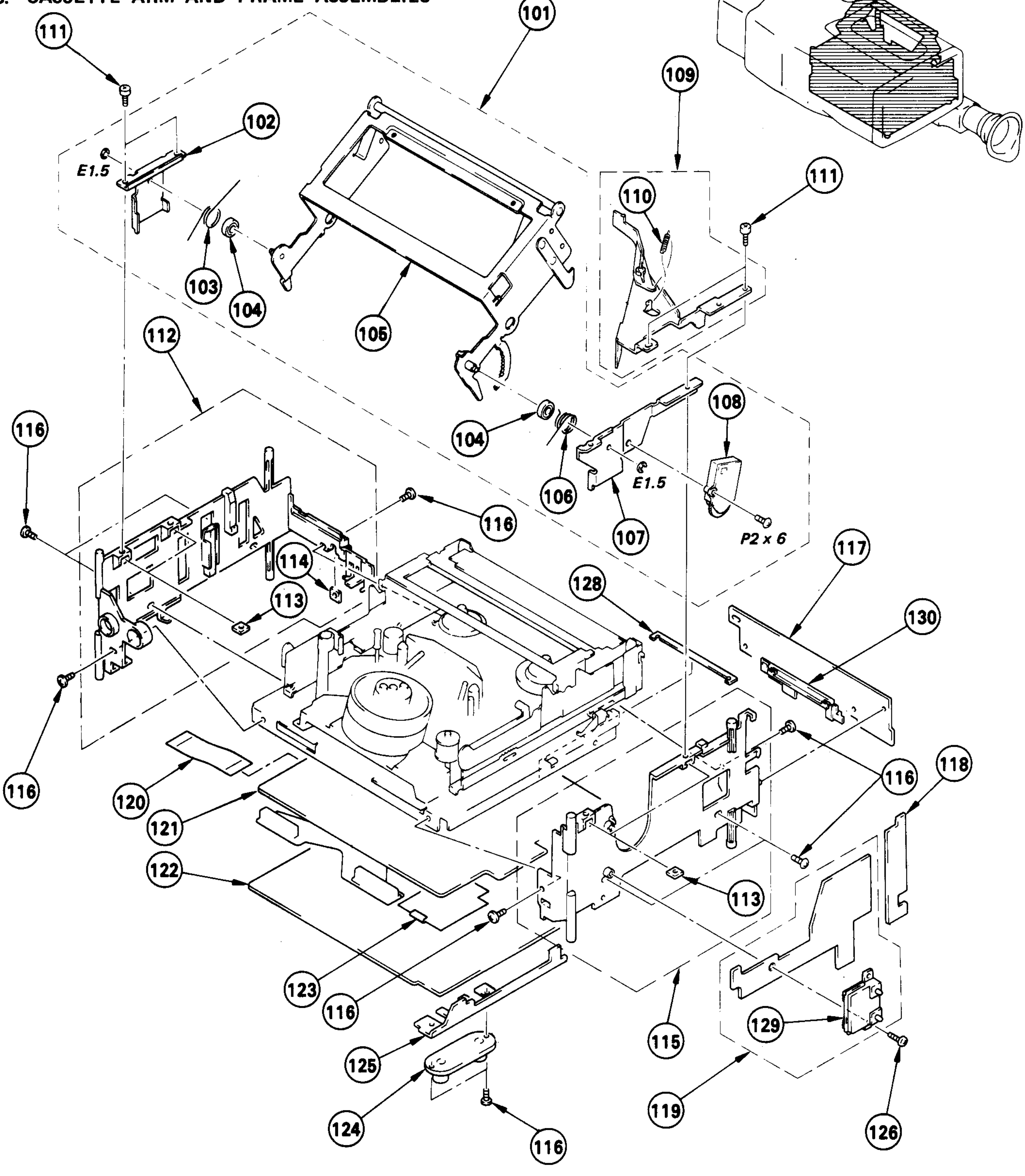
5-2. LEFT CABINET ASSEMBLY

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.



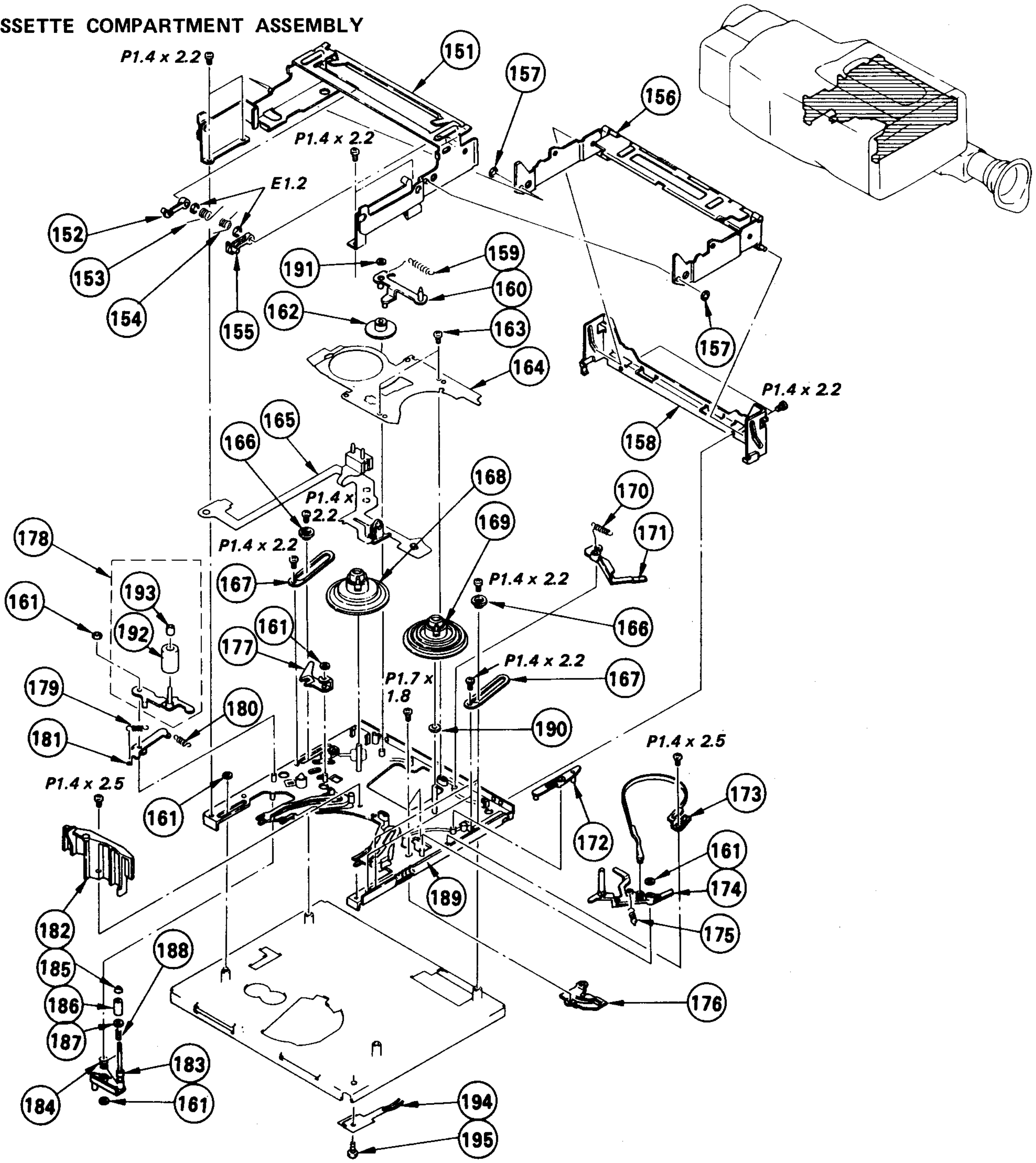
No.	Part No.	Description	Remark
51	A-7019-099-A	EVF BLOCK ASSY	52-65
52	*A-7061-236-A	VF-13 BOARD, COMPLETE	
53	*A-7070-728-A	TL-18 BOARD, COMPLETE	
54	*A-7070-729-A	TL-19 BOARD, COMPLETE	
55	X-3724-509-1	HOLDER ASSY, CRT	
56	⚠.1-451-310-21	DEFLECTION YOKE (B/W) (L951)	
57	⚠.1-546-065-11	CATHODE-RAY TUBE, B/W (MOIJVV47WB)(V901)	
58	3-724-549-01	LOCK, CRT	
59	3-724-570-01	RING, CRT FIXED	
60	A-7080-486-A	CABINET (LOWER) ASSY, EVF	
61	A-7090-807-A	HOLDER BLOCK ASSY, FINDER	62
62	3-724-544-02	EYE CUP	
63	X-3724-508-1	CABINET (UPPER) ASSY, EVF	
64	3-719-381-01	SCREW (M2X4)	
65	*3-725-156-01	INSULATOR (B), EVF	
66	A-7080-589-A	CABINET (L) BLOCK ASSY	64, 67, 69-80
67	3-669-480-21	+ PTPWH 2	
68	*2-532-810-00	CUSHION, 15X5X0.3	
69	3-713-787-01	SCREW (M2X4)	
70	3-724-511-01	SHOE, ACCESSORY	
71	3-724-512-01	SPRING	
72	3-724-513-01	PLATE, LOCK	
73	3-724-514-01	SLEEVE, EVF	
74	3-724-525-01	BRACKET (UPPER), STRAP	
75	3-724-582-01	BELT, GRIP	
76	3-724-591-01	PAD, GRIP	
77	*3-726-505-01	SHEET METAL, ACC	
78	*3-726-507-01	JOINT, DL	
79	*3-726-531-01	WINDOW, INDICATION, DDS	
80	X-3724-564-1	BASE ASSY, SP	
81	1-542-101-11	MICROPHONE (C-2020)	82
82	X-2356-712-1	WIND SCREEN ASSY	
83	3-724-526-01	BUTTON, ZOOM	
84	*A-7070-747-A	ZM-8 BOARD, COMPLETE	
85	3-724-527-01	BASE, ZOOM BUTTON	
86	3-713-792-01	SCREW (M2X10)	
87	A-7070-748-A	SW-92 BOARD, COMPLETE	
88	*3-724-569-01	SHEET METAL, SP	
89	3-725-178-01	HOUSING, MICROPHONE	
90	*A-7061-344-A	MC-24 BOARD, COMPLETE	
91	3-726-508-01	SHEET METAL, MC	
92	*3-725-153-01	SHEET, INSULATING, SHEET METAL	

5-3. CASSETTE ARM AND FRAME ASSEMBLIES


101
111
102
E1.5
103
104
105
109
110
111
112
116
104
106
108
E1.5
107
P2 x 6
116
114
113
128
117
130
116
116
118
120
121
122
113
123
116
115
129
125
124
119
116
126

No.	Part No.	Description	Remark
101	A-7040-141-A	ARM BLOCK ASSY (3), CASSETTE	102-108
102	*3-719-606-01	PLATE (T2) (M), SIDE	
103	3-695-582-01	SPRING, TORSION	
104	3-695-512-02	COLLAR, CASSETTE ARM	
105	X-3712-034-4	ARM ASSY (2), CASSETTE	
106	3-695-581-01	SPRING, TORSION	
107	3-695-641-01	PLATE (S2), SIDE	
108	3-681-528-11	DAMPER	
109	A-7040-140-B	GUARD BLOCK ASSY, TAPE	110
110	3-695-718-01	SPRING, TENSION	
111	3-719-697-01	SCREW (M1.7X5), SPECIAL HEAD	
112	*X-3724-503-1	FRAME (F) ASSY, MD	113, 114
113	3-716-418-01	NUT, FRAME PLATE	
114	3-718-233-01	NUT, PLATE	
115	*X-3724-504-1	FRAME (R) ASSY, MD	113
116	3-719-695-01	SCREW (M1.7X3.5), SPECIAL HEAD	
117	*A-7070-733-A	FV-1 BOARD, COMPLETE	
118	*A-7070-744-A	EJ-4 BOARD, COMPLETE	
119	*A-7070-734-A	PA-13 BOARD, COMPLETE	129
120	1-574-083-11	CABLE, FLAT (1.0MM PITCH) 15P	
121	*A-7061-299-A	SS-86 BOARD, COMPLETE	128
122	*A-7061-298-A	VA-41 BOARD, COMPLETE	
123	*3-726-558-01	PLATE, SHIELD, VA-SS	
124	1-537-142-11	TERMINAL BOARD (AV OUT) (J361)	
125	*X-3724-577-1	REINFORCEMENT (B) ASSY, VA	
126	3-719-601-01	SCREW (B2X5), TAPPING	
128	*3-725-136-01	REINFORCEMENT, VA-SS	
129	1-535-658-11	TERMINAL BOARD	
130	3-724-537-01	HOLDER, FV PC BOARD	

5-4. LS CASSETTE COMPARTMENT ASSEMBLY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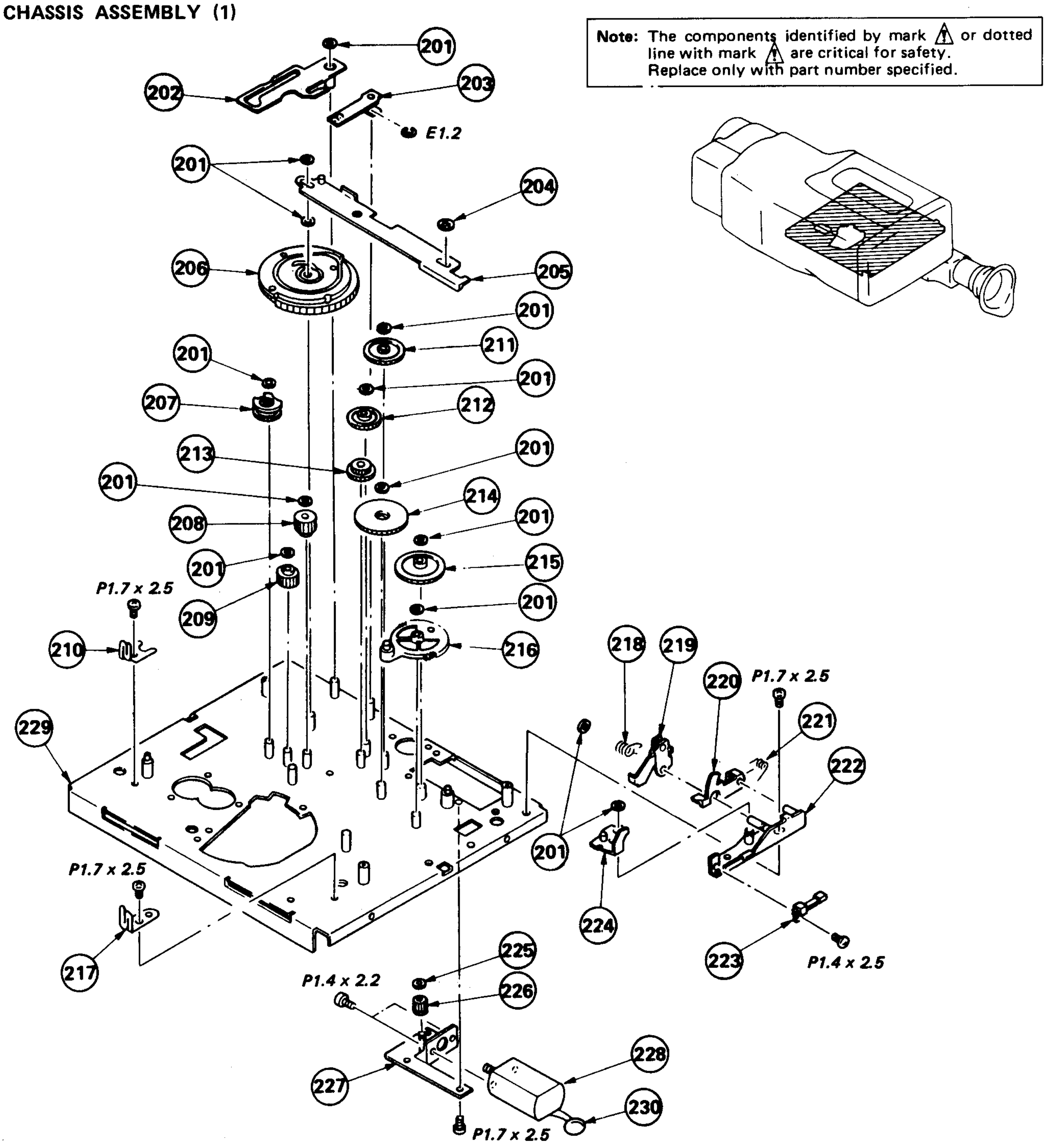
No.	Part No.	Description	Remark
151	X-3695-447-6	COMPARTMENT ASSY, CASSETTE, LS	
152	3-695-595-01	RETAINER (T), CASSETTE	
153	3-695-605-01	SPRING, TORSION	
154	3-695-604-01	SPRING, TORSION	
155	3-695-594-01	RETAINER (S), CASSETTE	
156	X-3695-448-3	ARM ASSY, BLIND	
157	3-669-465-00	WASHER (1.5), STOPPER	
158	3-695-646-01	ARM, LS	
159	3-695-718-01	SPRING, TENSION	
160	X-3712-037-1	LEVER (A) ASSY (2)	
161	3-315-384-31	WASHER, STOPPER	
162	X-3712-025-1	GEAR ASSY, TS	
163	3-699-402-01	SCREW (M1.3X5.5), TAPPING	
164	3-712-165-01	PLATE (2), STOPPER	
165	A-7060-693-A	FP-53 BOARD, COMPLETE	
166	3-695-698-01	GUIDE, LS	
167	3-695-697-01	SPRING, LEAF, LS	
168	X-3695-436-1	TABLE ASSY, REEL, TAKE-UP	
169	X-3712-038-1	TABLE ASSY (2), REEL, SUPPLY	190
170	3-542-475-00	SPRING, TENSION	
171	3-712-151-01	BRAKE (2), SOFT	
172	3-695-735-04	ARM, TG1 RELEASE	
173	X-3695-432-1	BAND ASSY, TG1	
174	X-3712-019-1	ARM ASSY (2), TG1	
175	3-695-591-01	SPRING, TENSION	
176	3-695-733-01	PLATE, CAM, LS	
177	X-3712-022-1	ARM (B) ASSY (2), PINCH	
178	X-3712-032-2	ARM (C) ASSY (2), PINCH	192, 193
179	3-695-622-01	SPRING, TENSION	
180	3-695-719-01	SPRING, TENSION	
181	X-3695-415-1	PINCH LEVER ASSY	
182	3-695-624-01	BASE, PROTECT	
183	X-3712-027-1	ARM ASSY (2), TG7	
184	3-695-541-01	SPRING	
185	3-712-158-01	FLANGE, UPPER, TG7	
186	3-712-160-01	SLEEVE (2), TG7	
187	3-712-159-01	FLANGE, LOWER, TG7	
188	3-712-157-01	SPRING, COMPRESSION	
189	X-3713-962-1	CHASSIS ASSY (2), LS	
190	3-701-444-01	WASHER, 6	
191	3-321-393-01	WASHER, STOPPER	
192	X-3695-416-1	PINCH ROLLER ASSY	
193	3-695-569-01	SLEEVE (P), PINCH INNER	
194	*3-725-151-01	PLATE, GROUND, RP	
195	3-719-695-21	SCREW (M1.7X2.5), SPECIAL HEAD	

5-5. CHASSIS ASSEMBLY (1)

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.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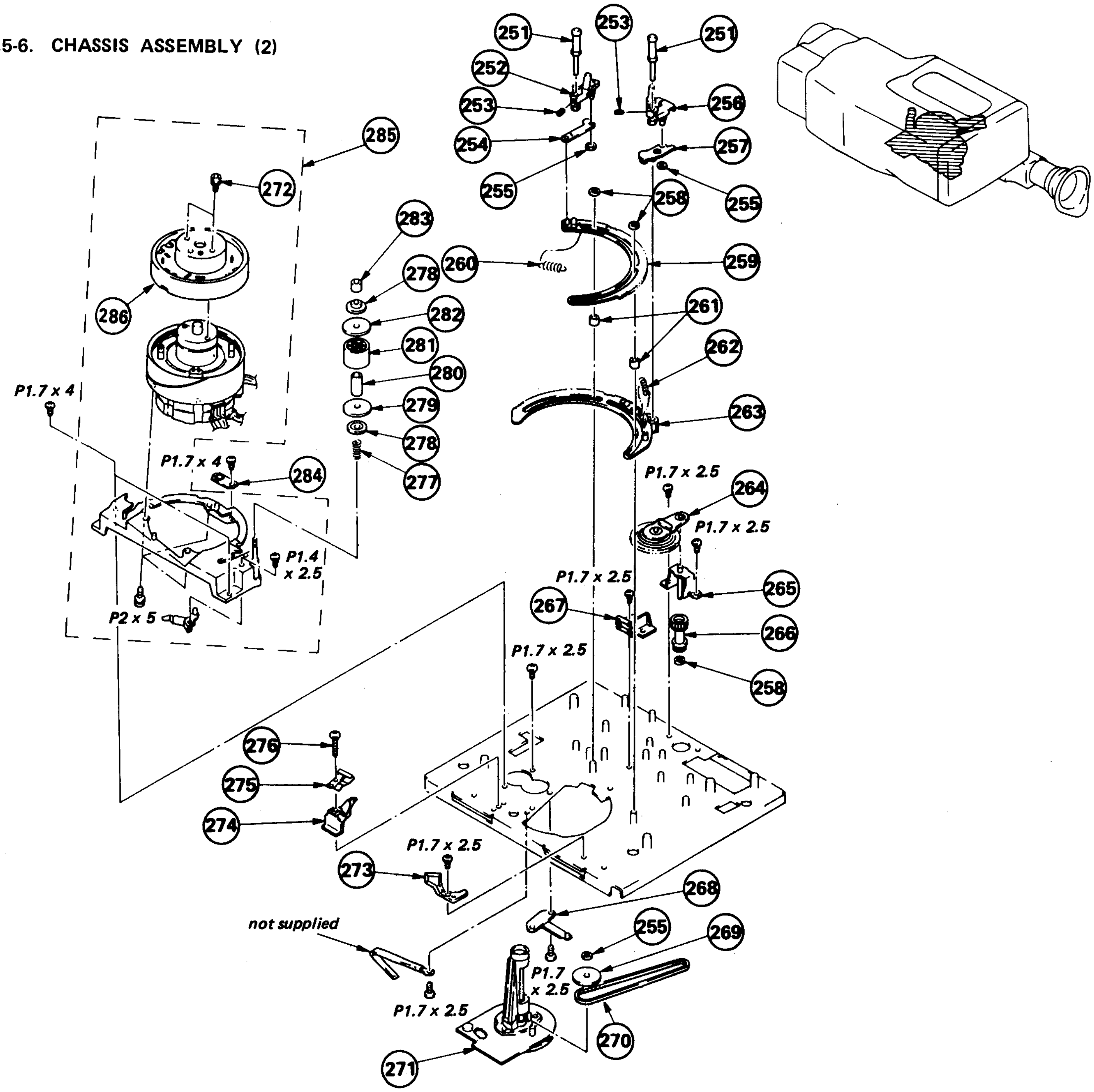
P1.4 x 2.5

No.	Part No.	Description	Remark
201	3-315-384-31	WASHER, STOPPER	
202	X-3712-023-1	ARM (A) ASSY (2), PINCH	
203	3-695-589-01	LEVER (B), REEL LOCK	
204	3-669-465-00	WASHER (1.5), STOPPER	
205	X-3695-439-4	SLIDER ASSY, M	
206	X-3712-031-1	CAM ASSY (2)	
207	3-712-156-01	GEAR (M) (2), THREADING	
208	3-695-537-01	GEAR (T), THREADING	
209	3-695-536-01	GEAR (S), THREADING	
210	3-695-706-01	SPRING (T)	
211	3-695-559-01	GEAR (B), THREADING	
212	3-695-724-01	GEAR (D), THREADING	
213	3-712-162-02	GEAR (C) (2), THREADING	
214	3-695-714-01	GEAR (A), LS	
215	3-695-563-04	GEAR (B), LS	
216	X-3695-417-1	GEAR (C) ASSY, LS	
217	3-695-705-01	SPRING (S)	
218	3-713-937-01	SPRING (A) (2)	
219	X-3695-418-1	ARM ASSY, LOCK	
220	3-695-574-01	ARM, RETURN PREVENTION	
221	3-695-579-01	SPRING (B), TORSION	
222	X-3712-018-1	BASE ASSY (2), LOCK	
223	1-553-226-00	SWITCH, LEAF (CASSETTE DOWN) (S902)	
224	X-3695-438-1	ARM ASSY, EJECT	
225	3-321-393-01	WASHER, STOPPER	
226	3-712-150-01	WHEEL, WORM	
227	X-3712-017-1	HOLDER ASSY, MOTOR	
228	⚠1-541-508-11	MOTOR, DC (LA14-323F) (LOADING) (M903)	
229	X-3712-036-1	CHASSIS ASSY (2), MECHANICAL	
230	1-161-032-00	CAP, CERAMIC 0.01MF (C901)	

5-6. CHASSIS ASSEMBLY (2)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P1.7 x 4
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P1.7 x 2.5
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P2 x 5
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P1.7 x 2.5
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P1.7 x 2.5
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not supplied
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P1.7 x 2.5
P1.7 x 2.5
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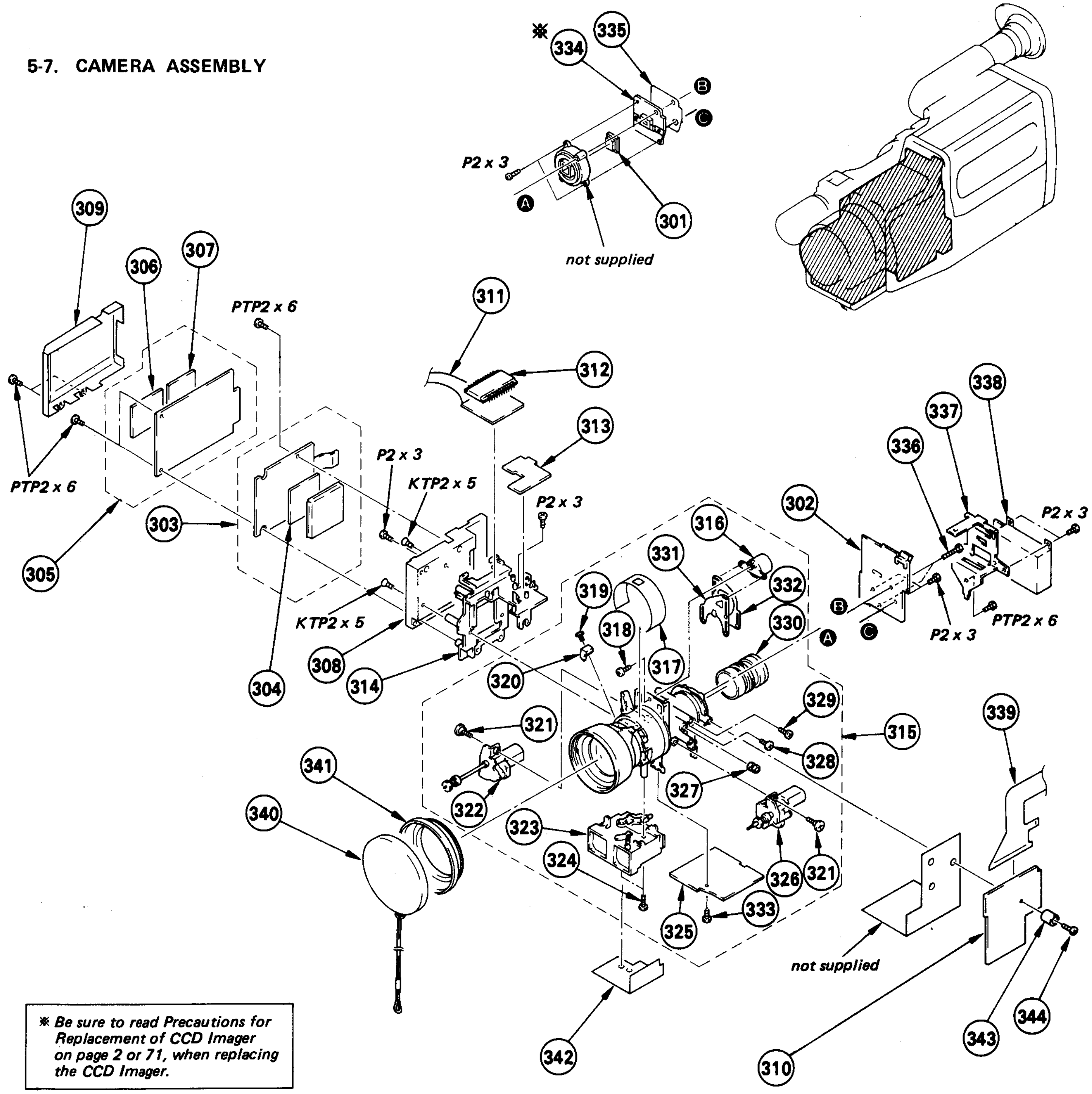
No.	Part No.	Description	Remark
251	X-3712-029-1	ROLLER ASSY (2), GUIDE	
252	X-3712-030-1	BASE ASSY (2), TG5	
253	3-695-770-01	SCREW, GR LOCK	
254	3-695-545-01	JOINT, T	
255	3-321-393-01	WASHER, STOPPER	
256	X-3712-028-1	BASE ASSY (2), TG4	
257	X-3695-429-1	JOINT ASSY, S	
258	3-315-384-31	WASHER, STOPPER	
259	X-3695-414-1	SLIDER (T) ASSY, THREADING	
260	3-695-773-01	SPRING, TENSION	
261	3-695-544-01	ROLLER, GUIDE	
262	3-695-772-01	SPRING, TENSION	
263	X-3695-428-1	SLIDER (S) ASSY, THREADING	
264	X-3712-024-1	ARM ASSY (2), GEAR	
265	X-3712-020-1	BASE ASSY (2), MIDWAY PULLEY	
266	X-3712-021-1	PULLEY ASSY (2), MIDWAY	
267	3-712-163-01	SUPPORT (2), SLIDER	
268	1-535-574-11	TERMINAL, SHAFT GROUND	
269	X-3695-413-1	GEAR ASSY, CHANGE	
270	3-695-637-01	BELT, RELAY	
271	8-835-309-01	MOTOR, DC BHF-3301C (CAPSTAN) (M902)	
272	3-686-403-01	SCREW (2X5), BOLT WASHER	
273	3-695-627-01	STOPPER, SLIDER, S	
274	3-695-628-01	STOPPER, SLIDER, T	
275	3-695-677-01	SPRING (T), LEAF	
276	3-695-519-01	SCREW, FITTING, LEAF SPRING(T)	
277	3-695-532-01	SPRING, COMPRESSION	
278	3-695-727-01	RETAINER, FLANGE, UPPER	
279	3-695-794-01	FLANGE, LOWER, TG2	
280	3-695-530-01	SLEEVE, TG2	
281	3-712-164-01	ROLLER (2), TG2	
282	3-695-528-01	FLANGE, TG2	
283	3-695-529-01	NUT, TG2	
284	1-807-238-11	SENSOR, DEW CONDENSATION	
285	⚠.A-7048-177-A	DRUM ASSY (DGU-27B-R)	272, 286
286	A-7049-143-A	DRUM ASSY, UPPER (DGR-27-R)	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

5-7. CAMERA ASSEMBLY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KTP2 x 5
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P2 x 3
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※ *Be sure to read Precautions for Replacement of CCD Imager on page 2 or 71, when replacing the CCD Imager.*

No.	Part No.	Description	Remark
301	A-7090-879-A	KIT, FILTER, OPTICAL	
302	*A-7061-294-A	VC-38 BOARD, COMPLETE	
303	*A-7061-295-A	VC-39 BOARD, COMPLETE	304
304	A-7068-127-A	DT-71 (HIC) BOARD, COMPLETE	
305	*A-7061-296-A	VC-40 BOARD, COMPLETE	306, 307
306	A-7068-128-A	MX-7 (HIC) BOARD, COMPLETE	
307	A-7068-129-A	PR-20 (HIC) BOARD, COMPLETE	
308	*X-3724-550-1	CASE (A) ASSY, SHIELD, VC	
309	*X-3724-551-1	CASE (B) ASSY, SHIELD, VC	
310	*A-7061-343-A	FC-16 BOARD, COMPLETE	311, 312
311	1-626-232-11	FP-123 FLEXIBLE BOARD (19P)	
312	1-808-385-11	L.C.D	
313	*A-7070-743-A	FD-6 BOARD, COMPLETE	
314	3-725-179-01	FRAME, CAMERA	
315	1-547-284-11	LENSE, ZOOM (VCL-906XB)	316-333
316	3-707-442-01	METER, IG (IRIS) (M904)	
317	3-707-443-01	SHEET, ZOOM	
318	3-707-444-01	SCREW, IG METER CLAMP	
319	3-707-445-01	SCREW, (N) STOPPER CLAMP	
320	3-707-446-01	STOPPER, (N)	
321	3-707-447-01	SCREW, MOTOR CLAMP	
322	3-707-448-01	MOTOR UNIT, AF (M905)	
323	3-707-449-01	BLOCK UNIT, AF	
324	3-707-450-01	SCREW, AF BLOCK CLAMP	
325	3-707-451-01	PC BOARD UNIT, AF	
326	3-707-452-01	MOTOR UNIT, ZOOM (M906)	
327	3-707-453-01	ROLLER, ECCECTRIC	
328	3-707-454-01	SCREW	
329	3-707-455-01	SCREW, RELAY SET	
330	3-707-456-01	MIRROR TUBE UNIT, RELAY	
331	3-707-457-01	(B) ASSY, IRIS FEATHER	
332	3-707-458-01	FEATHER, IRIS (A)	
333	3-707-459-01	SCREW, AF PC BOARD CLAMP	
334	A-7090-878-A	CCD ASSY (CCD IMAGER)	
335	*3-725-180-01	SHEET, INSULATING, CCD HOLDER	
336	3-713-790-51	SCREW (M2X16), TAPPING, P3	
337	3-725-182-01	JOINT	
338	1-464-993-12	CONVERTER, DC-DC	
339	1-626-233-11	FP-124 FLEXIBLE BOARD	
340	A-7090-806-A	CAP ASSY, HOOD	
341	3-724-589-01	HOOD, LENZ	
342	3-726-533-01	COVER, AF	
343	*3-725-184-01	RETAINER, FC	
344	3-719-601-01	SCREW (B2X5), TAPPING	

FP-53 **VF-13**

SECTION 7
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX, -X mean standardized parts, so they may have some differences from the original one.
- SEMICONDUCTORS
  In each case, U: μ, for example:
  UA. . . : μA. . . , UPA. . . : μPA. . . ,
  UPB. . . : μPB. . . , UPC. . . : μPC. . . ,
  UPD. . . : μPD. . .
- CAPACITORS
  MF: μF, PF: μμF
- COILS
  MMH: mH, UH: μH

Ref.No	Part No.	Description	Remark
	A-7060-693-A	FP-53 BOARD, COMPLETE (Ref.No. 4,000 Series) ***********************	
	3-713-904-01	HOLDER (2), LED	
		DIODE	
D302	8-719-940-81	DIODE GL452S	
D303	8-719-801-55	DIODE TLP907-0	
D304	8-719-801-55	DIODE TLP907-0	
		SWITCH	
S301	1-570-869-11	SWITCH, PUSH (2 KEY)	

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Ref.No	Part No.	Description	Remark
	*A-7061-236-A	VF-13 BOARD, COMPLETE (Ref.No. 6,000 Series) ***********************	
	1-526-978-21	SOCKET ASSY, CRT	
	3-713-535-01	CUSHION, CRT	
	*3-725-155-01	INSULATOR, FB	
		CAPACITOR	
C901	1-126-369-11	ELECT 220MF 20% 6.3V	
C902	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C904	1-127-486-00	ELECT(SOLID) 47MF 20% 6.3V	
C905	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C906	1-163-115-00	CERAMIC CHIP 82PF 5% 50V	
C907 ⚠.	1-162-625-11	CERAMIC CHIP 0.0047MF 5% 50V	
C908 ⚠.	1-163-015-00	CERAMIC CHIP 0.0033MF 10% 50V	
C909	1-126-193-11	ELECT 1MF 20% 50V	
C911	1-131-388-00	TANTALUM 68MF 10% 3.15V	
C912	1-102-038-00	CERAMIC 0.001MF 99% 500V	
C913	1-163-033-00	CERAMIC CHIP 0.022MF 50V	
C915	1-126-193-11	ELECT 1MF 20% 50V	
C916	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
C917	1-135-166-21	TANTAL. CHIP 47MF 20% 6.3V	
C918	1-162-638-11	CERAMIC CHIP 1MF 16V	
C919	1-135-070-00	TANTAL. CHIP 0.1MF 10% 35V	
C920	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
		CONNECTOR	
CN901	*1-566-195-21	PIN, CONNECTOR (PC BOARD) 2P	
CN902	*1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P	
		CONPOSITION CIRCUIT BLOCK	
CP901	1-238-119-11	RES, ADJ	
		DIODE	
D903	8-719-400-20	DIODE MA152WA	

Ref.No	Part No.	Description	Remark
		IC	
IC901	8-759-420-01	IC AN2512S	
		COIL	
L901	1-408-421-00	INDUCTOR 100UH	
L902	1-410-379-21	INDUCTOR CHIP 6.8UH	
L903 ⚠.	1-459-858-11	COIL, FERRITE (HLC)	
		TRANSISTOR	
Q903	8-729-106-64	TRANSISTOR 2SD1615	
Q904	8-729-216-32	TRANSISTOR 2SA1163G	
		RESISTOR	
R902	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R903	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R907	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R908	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R909	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R911	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R912	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R913	1-216-123-11	METAL GLAZE 1.2M 5% 1/10W	
R914	1-216-133-00	METAL GLAZE 3.3M 5% 1/10W	
R915	1-216-133-00	METAL GLAZE 3.3M 5% 1/10W	
R916	1-216-125-00	METAL GLAZE 1.5M 5% 1/10W	
R917	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R919	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R920	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R921	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R922	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R923	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R924	1-216-306-11	METAL GLAZE 3.9 5% 1/10W	
R925	1-216-336-11	METAL GLAZE 47K 1% 1/10W	
R926	1-216-107-00	METAL GLAZE 270K 5% 1/10W	
R928	1-216-870-11	METAL GLAZE 180K 1% 1/10W	
R929	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R930	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R931	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
		VARIABLE RESISTOR	
RV901	1-230-203-00	RES, ADJ, METAL GLAZE 2.2M	
		TRANSFORMER	
T901 ⚠.	1-439-428-11	TRANSFORMER ASSY, FLYBACK	
		THERMISTOR	
TH901	1-807-938-11	THERMISTOR	

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Ref.No	Part No.	Description	Remark
	*A-7070-728-A	TL-18 BOARD, COMPLETE **********************	(Ref.No. 6,000 Series)
		DIODE	
D950	8-719-941-34	DIODE GL1HD51	
		RESISTOR	
R950	1-216-037-00	METAL GLAZE 330 5% 1/10W	

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Ref.No	Part No.	Description	Remark
	*A-7070-729-A	TL-19 BOARD, COMPLETE **********************	(Ref.No. 6,000 Series)
		DIODE	
D955	8-719-941-34	DIODE GL1HD51	

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Ref.No	Part No.	Description	Remark
	*A-7061-294-A	VC-38 BOARD, COMPLETE **********************	(Ref.No. 1,000 Series)
	3-724-530-01	HOLDER, WB SENSOR	
		CAPACITOR	
C600	1-135-092-21	TANTAL. CHIP 3.3MF 20% 16V	
C601	1-135-091-00	TANTAL. CHIP 1MF 20% 16V	
C602	1-135-092-21	TANTAL. CHIP 3.3MF 20% 16V	
C603	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C604	1-135-079-21	TANTAL. CHIP 3.3MF 20% 25V	
C605	1-126-196-11	ELECT 3.3MF 20% 50V	
C606	1-124-248-00	ELECT 22MF 20% 35V	
C607	1-163-036-00	CERAMIC CHIP 0.068MF 50V	
C608	1-163-036-00	CERAMIC CHIP 0.068MF 50V	
C609	1-164-005-11	CERAMIC CHIP 0.47MF 25V	
C610	1-126-205-11	ELECT 47MF 20% 6.3V	
C611	1-162-638-11	CERAMIC CHIP 1MF 16V	
C850	1-130-467-00	MYLAR 470PF 5% 50V	
C851	1-130-481-00	MYLAR 0.0068MF 5% 50V	
C852	1-135-155-21	TANTAL. CHIP 4.7MF 20% 10V	
C853	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C854	1-124-779-00	ELECT 10MF 20% 16V	
C855	1-162-638-11	CERAMIC CHIP 1MF 16V	
C856	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C857	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C858	1-124-779-00	ELECT 10MF 20% 16V	
		CONNECTOR	
CN600	*1-566-547-11	CONNECTOR, FPC (NON ZIF) 15P	
CN601	*1-565-542-21	PIN, CONNECTOR (PC BOARD) 3P	
CN850	*1-566-183-21	PIN, CONNECTOR (PC BOARD) 4P	
CN851	*1-565-542-11	PIN, CONNECTOR (PC BOARD) 3P	
		DIODE	
D600	8-719-404-35	DIODE MA141WA	
D601	8-719-404-46	DIODE MA110	
D850	8-719-801-45	DIODE 1SS187	
		IC	
IC600	A-7090-878-A	CCD ASSY (CCD IMAGER)	
IC850	8-759-030-27	IC MC34182MR	
IC851	8-759-106-23	IC UPD4066BG	
IC852	8-759-012-75	IC MC146805F2FPSC82533F	
IC853	8-759-100-93	IC UPC393G2	
		COIL	
L600	1-412-032-21	INDUCTOR CHIP 100UH	
L850	1-412-031-11	INDUCTOR CHIP 47UH	
		TRANSISTOR	
Q600	8-729-105-53	TRANSISTOR 2SK300	
Q601	8-729-402-13	TRANSISTOR XN1501	
Q602	8-729-905-35	TRANSISTOR 2SC4081R	
Q850	8-729-403-06	TRANSISTOR XN1113	
Q851	8-729-403-06	TRANSISTOR XN1113	
Q852	8-729-805-69	TRANSISTOR 2SA1341	
Q855	8-729-403-07	TRANSISTOR XN1213	
Q856	8-729-403-07	TRANSISTOR XN1213	
Q868	8-729-805-45	TRANSISTOR 2SC3395	
Q869	8-729-403-07	TRANSISTOR XN1213	
		RESISTOR	
R600	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R601	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R602	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R603	1-216-091-00	METAL GLAZE 56K 5% 1/10W	
R604	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R605	1-216-107-00	METAL GLAZE 270K 5% 1/10W	
R606	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R607	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R608	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R609	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R610	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R611	1-216-042-00	METAL GLAZE 510 5% 1/10W	
R613	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R850	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R851	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R852	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R853	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R855	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R856	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R857	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R858	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R860	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R861	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R862	1-216-073-00	METAL GLAZE 10K 5% 1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R863	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R864	1-216-107-00	METAL GLAZE	270K	5%	1/10W	
R865	1-216-099-00	METAL GLAZE	120K	5%	1/10W	
R866	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R867	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R868	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R869	1-216-115-00	METAL GLAZE	560K	5%	1/10W	
R870	1-216-107-00	METAL GLAZE	270K	5%	1/10W	
R871	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R872	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R873	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R882	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R883	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R884	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R885	1-216-085-00	METAL GLAZE	33K	5%	1/10W	

VARIABLE RESISTOR

RV600	1-230-873-11	RES, ADJ, METAL GLAZE 47K
RV850	1-230-870-11	RES, ADJ, METAL GLAZE 10K

BALANCE SENSOR

SB850	1-807-684-11	SENSOR, WHITE BALANCE

CRYSTAL

X850	1-567-152-00	OSCILLATOR, CERAMIC

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*A-7061-295-A VC-39 BOARD, COMPLETE (Ref.No. 1,000 Series)
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A-7068-127-A DT-71 BOARD, COMPLETE (HIC)

CAPACITOR

C620	1-163-145-00	CERAMIC CHIP	0.0015MF	10%	50V
C621	1-163-145-00	CERAMIC CHIP	0.0015MF	10%	50V
C622	1-163-145-00	CERAMIC CHIP	0.0015MF	10%	50V
C623	1-163-145-00	CERAMIC CHIP	0.0015MF	10%	50V
C624	1-162-637-11	CERAMIC CHIP	0.47MF		16V
C625	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C626	1-126-205-11	ELECT	47MF	20%	6.3V
C629	1-135-145-11	TANTAL. CHIP	0.47MF	20%	35V
C630	1-126-204-11	ELECT	47MF	20%	16V
C631	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C632	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C633	1-126-204-11	ELECT	47MF	20%	16V
C634	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C635	1-124-778-00	ELECT	22MF	20%	6.3V
C636	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C637	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C638	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C639	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C641	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C642	1-135-089-21	TANTAL. CHIP	6.8MF	20%	20V
C643	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C644	1-126-204-11	ELECT	47MF	20%	16V
C645	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C646	1-124-778-00	ELECT	22MF	20%	6.3V
C647	1-163-036-00	CERAMIC CHIP	0.068MF		50V
C648	1-126-202-21	ELECT	22MF	20%	35V
C649	1-163-036-00	CERAMIC CHIP	0.068MF		50V
C650	1-135-079-21	TANTAL. CHIP	3.3MF	20%	35V
C651	1-164-161-11	CERAMIC CHIP	0.0022MF	10%	50V
C652	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C653	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C654	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C655	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C656	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C658	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C659	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C660	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C661	1-126-199-11	ELECT	6.8MF	20%	35V
C662	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C663	1-126-199-11	ELECT	6.8MF	20%	35V
C664	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C665	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C666	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C667	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C668	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C669	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C670	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C671	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C672	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C673	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C675	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C676	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C677	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C678	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C679	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C680	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C681	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C682	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C683	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C684	1-163-133-00	CERAMIC CHIP	470PF	10%	50V
C687	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V

CONNECTOR

CN620	1-566-428-11	PIN, CONNECTOR 4P
CN622	*1-506-743-11	PIN, CONNECTOR 5P
CN623	*1-566-181-11	PIN, CONNECTOR (PC BOARD) 2P

TRIMMER

CT620	1-141-331-11	CAP, VAR, TRIMMER (CHIP)

DIODE

D623	8-719-404-49	DIODE MA111

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
D624	8-719-404-49	DIODE MA111	
D625	8-713-220-00	DIODE 1T32	
D626	8-719-404-49	DIODE MA111	

IC

IC620	8-759-701-24	IC NJM3414M	
IC621	8-752-326-08	IC CXD1159Q	

COIL

L621	1-412-034-21	INDUCTOR CHIP 330UH	
L622	1-412-029-11	INDUCTOR CHIP 10UH	
L623	1-412-029-11	INDUCTOR CHIP 10UH	
L624	1-412-034-21	INDUCTOR CHIP 330UH	
L625	1-412-032-21	INDUCTOR CHIP 100UH	
L626	1-410-204-31	INDUCTOR CHIP 10UH	
L627	1-410-204-31	INDUCTOR CHIP 10UH	
L628	1-410-192-51	INDUCTOR CHIP 1UH	
L629	1-410-180-51	INDUCTOR CHIP 0.1UH	
L630	1-410-180-51	INDUCTOR CHIP 0.1UH	
L631	1-410-180-51	INDUCTOR CHIP 0.1UH	
L632	1-410-192-51	INDUCTOR CHIP 1UH	

TRANSISTOR

Q621	8-729-402-84	TRANSISTOR XN4601	
Q622	8-729-402-84	TRANSISTOR XN4601	
Q623	8-729-402-84	TRANSISTOR XN4601	
Q624	8-729-403-07	TRANSISTOR XN1213	
Q625	8-729-809-88	TRANSISTOR 2SA1416-S	
Q626	8-729-810-01	TRANSISTOR 2SC3646-S	
Q627	8-729-402-84	TRANSISTOR XN4601	
Q628	8-729-116-05	TRANSISTOR 2SK160-K5	
Q629	8-729-905-23	TRANSISTOR 2SA1576R	
Q630	8-729-402-84	TRANSISTOR XN4601	

RESISTOR

R621	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R622	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R624	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R625	1-216-013-00	METAL GLAZE 33 5% 1/10W	
R626	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R627	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R629	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R630	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R633	1-216-044-00	METAL GLAZE 620 5% 1/10W	
R634	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R635	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R636	1-216-055-00	METAL GLAZE 1.8K 5% 1/10W	
R637	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R638	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R640	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R641	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R642	1-216-079-00	METAL GLAZE 18K 5% 1/10W	
R643	1-216-084-00	METAL GLAZE 30K 5% 1/10W	
R644	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R645	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R647	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R648	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R649	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R650	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R651	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R652	1-216-103-00	METAL GLAZE 180K 5% 1/10W	
R653	1-216-083-00	METAL GLAZE 27K 5% 1/10W	
R654	1-216-103-00	METAL GLAZE 180K 5% 1/10W	
R655	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R656	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R657	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R658	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R660	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R661	1-216-077-00	METAL GLAZE 15K 5% 1/10W	
R662	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R663	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R666	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R667	1-216-005-00	METAL GLAZE 15 5% 1/10W	
R668	1-216-005-00	METAL GLAZE 15 5% 1/10W	
R669	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R670	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R671	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R672	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R674	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R675	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R678	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R679	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R680	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R681	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R683	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R684	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R685	1-216-093-00	METAL GLAZE 68K 5% 1/10W	
R687	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R688	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R689	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R690	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R691	1-216-053-00	METAL GLAZE 1.5K 5% 1/10W	
R692	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R694	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R695	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R696	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R697	1-216-089-00	METAL GLAZE 47K 5% 1/10W	

VARIABLE RESISTOR

RV620	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV621	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	
RV622	1-230-869-11	RES, ADJ, METAL GLAZE 4.7K	

FLAT CABLE

W620	1-574-082-11	CABLE, FLAT (1.0MM PITCH) 15P	
W621	1-559-927-11	CABLE, FLAT (1.0MM PITCH) 33P	

When indicating parts by reference number, please include the board name.

VC-39 VC-40

CRYSTAL

Ref.No	Part No.	Description		Remark
X620	1-577-119-11	OSCILLATOR, CRYSTAL		
X621	1-567-733-11	VIBRATOR, CRYSTAL		

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*A-7061-296-A VC-40 BOARD, COMPLETE (Ref.No. 1,000 Series)
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A-7068-128-A MX-7 BOARD, COMPLETE (HIC)

A-7068-129-A PR-20 BOARD, COMPLETE (HIC)

CAPACITOR

Ref.No	Part No.	Description		Remark
C701	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C702	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C703	1-124-778-00	ELECT 22MF	20%	6.3V
C704	1-124-778-00	ELECT 22MF	20%	6.3V
C705	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C706	1-126-206-11	ELECT 100MF	20%	6.3V
C707	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C710	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C711	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C712	1-163-111-00	CERAMIC CHIP 56PF	5%	50V
C713	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C714	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C715	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C716	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C717	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C718	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C719	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C720	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C721	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C722	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C723	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C724	1-164-005-11	CERAMIC CHIP 0.47MF		25V
C725	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C726	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C727	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C728	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C729	1-126-198-11	ELECT 4.7MF	20%	35V
C730	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C731	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C732	1-124-566-11	ELECT 120MF	20%	6.3V
C733	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C734	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C736	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C737	1-163-115-00	CERAMIC CHIP 82PF	5%	50V
C738	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C739	1-163-095-00	CERAMIC CHIP 12PF	5%	50V
C740	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C741	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C742	1-124-778-00	ELECT 22MF	20%	6.3V
C743	1-124-778-00	ELECT 22MF	20%	6.3V
C744	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C745	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C746	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C747	1-163-095-00	CERAMIC CHIP 12PF	5%	50V
C748	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C749	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C750	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C752	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C753	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C754	1-163-145-00	CERAMIC CHIP 0.0015MF	10%	50V
C755	1-163-145-00	CERAMIC CHIP 0.0015MF	10%	50V
C756	1-163-145-00	CERAMIC CHIP 0.0015MF	10%	50V
C757	1-163-101-00	CERAMIC CHIP 22PF	5%	50V

CONNECTOR

Ref.No	Part No.	Description		Remark
CN701	*1-566-183-11	PIN, CONNECTOR (PC BOARD) 4P		
CN702	*1-566-183-21	PIN, CONNECTOR (PC BOARD) 4P		
CN703	*1-566-547-11	CONNECTOR, FPC (NON ZIF) 15P		
CN704	*1-565-532-11	PIN, CONNECTOR (PC BOARD) 7P		
CN705	*1-566-187-11	PIN, CONNECTOR (PC BOARD) 8P		

DIODE

Ref.No	Part No.	Description		Remark
D701	8-719-404-46	DIODE MA110		

FILTER

Ref.No	Part No.	Description		Remark
FL701	1-236-266-11	FILTER, LOW PASS (YH)		
FL702	1-236-267-11	FILTER, LOW PASS (YDL)		
FL704	1-236-192-11	FILTER, LOW PASS		
FL705	1-236-196-11	LPF		
FL706	1-415-554-21	DELAY LINE, LC		
FL707	1-236-265-11	FILTER, BAND PASS		

IC

Ref.No	Part No.	Description		Remark
IC701	8-752-033-34	IC CXA1072R		

COIL

Ref.No	Part No.	Description		Remark
L701	1-412-031-11	INDUCTOR CHIP 47UH		
L702	1-412-031-11	INDUCTOR CHIP 47UH		
L703	1-410-204-31	INDUCTOR CHIP 10UH		
L704	1-410-657-21	INDUCTOR CHIP 180UH		

TRANSISTOR

Ref.No	Part No.	Description		Remark
Q701	8-729-905-23	TRANSISTOR 2SA1576R		
Q702	8-729-905-35	TRANSISTOR 2SC4081R		
Q705	8-729-905-23	TRANSISTOR 2SA1576R		
Q706	8-729-905-35	TRANSISTOR 2SC4081R		
Q707	8-729-905-23	TRANSISTOR 2SA1576R		
Q708	8-729-905-35	TRANSISTOR 2SC4081R		
Q709	8-729-402-78	TRANSISTOR XN6401		
Q710	8-729-905-23	TRANSISTOR 2SA1576R		
Q711	8-729-905-35	TRANSISTOR 2SC4081R		

When indicating parts by reference number, please include the board name.

RESISTOR

Ref.No	Part No.	Description				Remark
R701	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R702	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R703	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R704	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R705	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R706	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R707	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R708	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R709	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R710	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R711	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R712	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R713	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R714	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R715	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R716	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R717	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R718	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R725	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R726	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R727	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R728	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R729	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R730	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R731	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R732	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R733	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R734	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R735	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R736	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R737	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R738	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R739	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R740	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R741	1-216-080-00	METAL GLAZE	20K	5%	1/10W	
R742	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R743	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R744	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R747	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R748	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R749	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R750	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R751	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R752	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R753	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R754	1-216-082-00	METAL GLAZE	24K	5%	1/10W	
R755	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R756	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R757	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R758	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R759	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R760	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R761	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R763	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R764	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R765	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R766	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R767	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R768	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R769	1-216-076-00	METAL GLAZE	13K	5%	1/10W	
R770	1-216-075-00	METAL GLAZE	12K	5%	1/10W	
R771	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R773	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R774	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R776	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R777	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R778	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R779	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R780	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R781	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R782	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R783	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R786	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R787	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R788	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R789	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R790	1-216-072-00	METAL GLAZE	9.1K	5%	1/10W	
R791	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R792	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R793	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R794	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R795	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R796	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R797	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R798	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R799	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R801	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R802	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R805	1-216-748-11	METAL GLAZE	39K	5%	1/10W	
R806	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R809	1-216-298-00	METAL GLAZE	2.2	5%	1/10W	
R810	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R811	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R812	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R813	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R814	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R815	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R816	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R819	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R820	1-216-031-00	METAL GLAZE	180	5%	1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV701	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV705	1-230-873-11	RES, ADJ, METAL GLAZE 47K	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
RV706	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV707	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV708	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV709	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV710	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV711	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV712	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV713	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV714	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV715	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV716	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV717	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV718	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV719	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV720	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV721	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV722	1-230-873-11	RES, ADJ, METAL GLAZE 47K	
RV724	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K	

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*A-7061-299-A SS-86 BOARD, COMPLETE (Ref.No.
********************** 2,000Series)

*3-718-223-01 HOLDER, TE
*3-725-136-01 REINFORCEMENT, VA-SS

CAPACITOR

Ref.No	Part No.	Description			Remark
C001	1-126-204-11	ELECT	47MF	20%	16V
C002	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C003	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C004	1-126-198-11	ELECT	4.7MF	20%	35V
C006	1-124-779-00	ELECT	10MF	20%	16V
C007	1-124-779-00	ELECT	10MF	20%	16V
C008	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C009	1-126-206-11	ELECT	100MF	20%	6.3V
C010	1-162-638-11	CERAMIC CHIP	1MF		16V
C011	1-162-638-11	CERAMIC CHIP	1MF		16V
C012	1-124-778-00	ELECT	22MF	20%	6.3V
C014	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C015	1-163-034-00	CERAMIC CHIP	0.033MF		50V
C017	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C051	1-163-077-00	CERAMIC CHIP	0.1MF	10%	25V
C052	1-163-077-00	CERAMIC CHIP	0.1MF	10%	25V
C053	1-163-077-00	CERAMIC CHIP	0.1MF	10%	25V
C054	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C055	1-124-577-11	ELECT	82MF	20%	10V
C056	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C057	1-124-577-11	ELECT	82MF	20%	10V
C058	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C059	1-124-577-11	ELECT	82MF	20%	10V
C060	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C061	1-126-204-11	ELECT	47MF	20%	16V
C062	1-162-638-11	CERAMIC CHIP	1MF		16V
C063	1-135-099-00	TANTAL. CHIP	2.2MF	20%	6.3V
C064	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C065	1-127-506-00	ELECT(SOLID)	1MF	20%	25V
C066	1-162-638-11	CERAMIC CHIP	1MF		16V
C067	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C068	1-126-196-11	ELECT	3.3MF	20%	50V
C069	1-124-779-00	ELECT	10MF	20%	16V
C070	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C071	1-124-779-00	ELECT	10MF	20%	16V
C072	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C073	1-135-091-00	TANTAL. CHIP	1MF	20%	16V
C074	1-124-779-00	ELECT	10MF	20%	16V
C075	1-124-779-00	ELECT	10MF	20%	16V
C076	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C080	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C081	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C082	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C083	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C084	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C085	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C086	1-136-017-00	CERAMIC CHIP	0.0047MF		50V
C087	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C088	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C089	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C200	1-124-779-00	ELECT	10MF	20%	16V
C201	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C202	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C204	1-124-779-00	ELECT	10MF	20%	16V
C205	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C206	1-124-779-00	ELECT	10MF	20%	16V
C207	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C209	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C210	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C211	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C212	1-124-779-00	ELECT	10MF	20%	16V
C213	1-124-778-00	ELECT	22MF	20%	6.3V
C215	1-135-145-11	TANTAL. CHIP	0.47MF	20%	25V
C216	1-163-059-00	CERAMIC CHIP	0.01MF	10%	50V
C217	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C218	1-163-089-00	CERAMIC CHIP	6PF	0.5PF	50V
C301	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C302	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C303	1-163-115-00	CERAMIC CHIP	82PF	5%	50V
C304	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C305	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C306	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C308	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C309	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C310	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C311	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C312	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C313	1-163-077-00	CERAMIC CHIP	0.1MF	10%	25V
C314	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C315	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C316	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C317	1-124-778-00	ELECT 22MF	20%	6.3V
C318	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C319	1-163-137-00	CERAMIC CHIP 680PF	5%	50V
C320	1-124-778-00	ELECT 22MF	20%	6.3V
C321	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C322	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C323	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C324	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C325	1-164-161-11	CERAMIC CHIP 0.0022MF	10%	50V
C326	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C327	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C328	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C329	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C330	1-124-778-00	ELECT 22MF	20%	6.3V
C332	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C333	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C334	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C335	1-124-778-00	ELECT 22MF	20%	6.3V
C336	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C337	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C338	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C339	1-124-778-00	ELECT 22MF	20%	6.3V
C340	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C341	1-124-779-00	ELECT 10MF	20%	16V
C342	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C343	1-124-778-00	ELECT 22MF	20%	6.3V
C344	1-163-809-11	CERAMIC CHIP 0.047MF	10%	25V
C345	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C346	1-164-004-11	CERAMIC CHIP 0.1MF	10%	25V
C347	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C348	1-124-778-00	ELECT 22MF	20%	6.3V
C349	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C350	1-163-123-00	CERAMIC CHIP 180PF	5%	50V
C351	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C353	1-124-778-00	ELECT 22MF	20%	6.3V

CONNECTOR

CN001	*1-564-014-00	PIN, CONNECTOR 4P
CN002	*1-564-014-00	PIN, CONNECTOR 4P
CN003	1-566-529-11	CONNECTOR, FPC (ZIF) 13P
CN004	*1-566-540-11	CONNECTOR, FPC (NON ZIF) 8P
CN005	*1-565-532-11	PIN, CONNECTOR (PC BOARD) 7P
CN006	*1-566-537-11	CONNECTOR, FPC (NON ZIF) 5P
CN007	1-566-536-11	CONNECTOR, FPC (ZIF) 20P

TRIMMER

CT200	1-141-368-11	CAP, CHIP TRIMMER

DIODE

D003	8-719-404-12	DIODE MA159

Ref.No	Part No.	Description	Remark
D004	8-719-404-12	DIODE MA159	
D050	8-719-938-75	DIODE SB05-05CP	
D051	8-719-938-75	DIODE SB05-05CP	
D200	8-719-100-03	DIODE 1S2835	
D201	8-719-404-12	DIODE MA159	
D203	8-713-300-88	DIODE 1T33C-01	
D399	8-719-109-60	DIODE RD2.7ES-B2	

IC

IC001	8-759-141-79	IC UPD78112GF-509-3BE
IC002	8-759-100-94	IC UPC358G2
IC003	8-759-804-72	IC LB1631M
IC004	8-759-202-45	IC CX20114
IC005	8-759-940-79	IC S-81350AG
IC006	8-759-107-68	IC CX20115A
IC007	8-759-805-06	IC CXA1127M
IC200	8-759-141-56	IC UPD7507HG-532-22
IC201	8-759-944-88	IC CXK58256MF-15LL
IC202	8-759-972-39	IC MB670493
IC203	8-759-101-12	IC UPC311G2
IC301	8-752-033-84	IC CXA1202R

COIL

L001	1-410-381-11	INDUCTOR CHIP 10UH
L002	1-410-381-11	INDUCTOR CHIP 10UH
L050	1-421-983-11	COIL, CHOKE 700UH
L051	1-421-983-11	COIL, CHOKE 700UH
L052	1-410-627-11	COIL, CHOKE 100UH
L053	1-410-389-11	INDUCTOR CHIP 47UH
L200	1-410-377-11	INDUCTOR CHIP 4.7UH
L201	1-410-377-11	INDUCTOR CHIP 4.7UH
L202	1-410-377-11	INDUCTOR CHIP 4.7UH
L203	1-410-377-11	INDUCTOR CHIP 4.7UH
L204	1-410-384-11	INDUCTOR CHIP 18UH
L301	1-408-777-00	INDUCTOR CHIP 10UH
L302	1-408-793-21	INDUCTOR CHIP 220UH
L303	1-412-029-11	INDUCTOR CHIP 10UH
L304	1-410-385-11	INDUCTOR CHIP 22UH
L305	1-410-732-21	INDUCTOR CHIP 0.18UH
L306	1-410-383-11	INDUCTOR CHIP 15UH
L307	1-412-033-11	INDUCTOR CHIP 220UH
L308	1-412-033-11	INDUCTOR CHIP 220UH

PHOTO TRANSISTOR

PH001	8-729-920-77	PHOTO TRANSISTOR PT480FS
PH002	8-729-920-77	PHOTO TRANSISTOR PT480FS

TRANSISTOR

Q001	8-729-808-18	TRANSISTOR 2SB926
Q002	8-729-117-32	TRANSISTOR 2SC4177
Q005	8-729-903-10	TRANSISTOR FMW1
Q006	8-729-903-10	TRANSISTOR FMW1
Q007	8-729-905-45	TRANSISTOR DTA143EU

When indicating parts by reference number, please include the board name.

SS-86

Ref.No	Part No.	Description	Remark
Q008	8-729-117-16	TRANSISTOR 2SA1611-6	
Q051	8-729-805-25	TRANSISTOR 2SB1121	
Q052	8-729-805-25	TRANSISTOR 2SB1121	
Q053	8-729-904-07	TRANSISTOR FMG2	
Q054	8-729-117-16	TRANSISTOR 2SA1611-6	
Q055	8-729-810-19	TRANSISTOR 2SC4396	
Q070	8-729-903-97	TRANSISTOR FMS1FE	
Q071	8-729-904-07	TRANSISTOR FMG2	
Q073	8-729-905-45	TRANSISTOR DTA143EU	
Q074	8-729-810-19	TRANSISTOR 2SC4396	
Q075	8-729-810-10	TRANSISTOR 2SA1676	
Q076	8-729-810-19	TRANSISTOR 2SC4396	
Q078	8-729-810-10	TRANSISTOR 2SA1676	
Q079	8-729-810-13	TRANSISTOR 2SA1677	
Q080	8-729-805-25	TRANSISTOR 2SB1121	
Q081	8-729-805-25	TRANSISTOR 2SB1121	
Q201	8-729-117-16	TRANSISTOR 2SA1611-6	
Q202	8-729-117-32	TRANSISTOR 2SC4177	
Q203	8-729-810-19	TRANSISTOR 2SC4396	
Q204	8-729-810-19	TRANSISTOR 2SC4396	
Q205	8-729-810-19	TRANSISTOR 2SC4396	
Q206	8-729-810-19	TRANSISTOR 2SC4396	
Q302	8-729-117-54	TRANSISTOR 2SA1175	
Q303	8-729-100-76	TRANSISTOR 2SA812	
Q304	8-729-810-10	TRANSISTOR 2SA1676	
Q305	8-729-810-10	TRANSISTOR 2SA1676	
Q307	8-729-810-19	TRANSISTOR 2SC4396	
Q308	8-729-810-25	TRANSISTOR 2SC4397	
Q309	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q310	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q311	8-729-117-32	TRANSISTOR 2SC4177	
Q312	8-729-117-32	TRANSISTOR 2SC4177	
Q313	8-729-117-32	TRANSISTOR 2SC4177	
Q314	8-729-810-19	TRANSISTOR 2SC4396	
Q315	8-729-810-13	TRANSISTOR 2SA1677	
Q316	8-729-810-10	TRANSISTOR 2SA1676	
Q317	8-729-117-32	TRANSISTOR 2SC4177	
Q318	8-729-117-32	TRANSISTOR 2SC4177	
Q319	8-729-810-10	TRANSISTOR 2SA1676	
Q320	8-729-117-32	TRANSISTOR 2SC4177	
Q321	8-729-810-19	TRANSISTOR 2SC4396	
		RESISTOR	
R001	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R002	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R003	1-216-186-00	METAL GLAZE 330 5% 1/8W	
R004	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R005	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R006	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R007	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R009	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R010	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R011	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R012	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R013	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R014	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R015	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R016	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R017	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R018	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R019	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R020	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R021	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R022	1-216-172-00	METAL GLAZE 82 5% 1/8W	
R025	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R026	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R027	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R028	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R029	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R030	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R031	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R032	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R033	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R034	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R038	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R040	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R041	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R045	1-216-043-00	METAL GLAZE 560 5% 1/10W	
R050	1-249-413-11	CARBON 470 5% 1/4W	
R051	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R052	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R053	1-216-298-00	METAL GLAZE 2.2 5% 1/10W	
R054	1-216-298-00	METAL GLAZE 2.2 5% 1/10W	
R055	1-216-298-00	METAL GLAZE 2.2 5% 1/10W	
R056	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R057	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R058	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R059	1-216-037-00	METAL GLAZE 330 5% 1/10W	
R060	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R061	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R062	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R063	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R064	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R065	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R066	1-216-047-00	METAL GLAZE 820 5% 1/10W	
R067	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R068	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R069	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R070	1-216-101-00	METAL GLAZE 150K 5% 1/10W	
R071	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R072	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R073	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R074	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R075	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R076	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R077	1-216-097-00	METAL GLAZE 100K 5% 1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R078	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R079	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R080	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R081	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R082	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R083	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R084	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R085	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R086	1-216-105-00	METAL GLAZE	220K	5%	1/10W	
R087	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R090	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R091	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R092	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R093	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R094	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R095	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R096	1-216-107-00	METAL GLAZE	270K	5%	1/10W	
R097	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R098	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R100	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R101	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R102	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R103	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R104	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R108	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R109	1-216-136-00	METAL GLAZE	2.7	5%	1/8W	
R110	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R111	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R112	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R200	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R201	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R202	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R203	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R204	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R205	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R206	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R207	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R208	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R209	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R210	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R211	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R212	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R213	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R214	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R215	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R216	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R217	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R229	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R230	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R231	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R233	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R235	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R236	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R237	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R238	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R240	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R241	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R242	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R243	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R244	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R245	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R246	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R247	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R248	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R249	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R304	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R305	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R306	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R307	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R308	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R309	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R311	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R312	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R313	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R314	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R315	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R316	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R318	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R319	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R320	1-216-101-00	METAL GLAZE	150K	5%	1/10W	
R323	1-216-095-00	METAL GLAZE	82K	5%	1/10W	
R324	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R325	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R326	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R327	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R328	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R329	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R331	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R332	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R334	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R335	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R336	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R337	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R338	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R339	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R340	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R341	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R342	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R343	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R344	1-216-029-00	METAL GLAZE	150	5%	1/10W	
R345	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R346	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R347	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R348	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R349	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R350	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R351	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R352	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R353	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R354	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R355	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R356	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R357	1-216-035-00	METAL GLAZE	270	5%	1/10W	
R358	1-216-041-00	METAL GLAZE	470	5%	1/10W	

VARIABLE RESISTOR

RV001	1-123-873-11	RES, ADJ, METAL GLAZE 47K
RV002	1-230-874-11	RES, ADJ, METAL GLAZE 100K
RV200	1-230-867-11	RES, ADJ, METAL GLAZE 1K
RV301	1-230-873-11	RES, ADJ, METAL GLAZE 47K
RV302	1-230-873-11	RES, ADJ, METAL GLAZE 47K
RV306	1-230-868-11	RES, ADJ, METAL GLAZE 2.2K

CRYSTAL

X001	1-567-885-11	VIBRATOR, CRYSTAL 12MHz
X200	1-567-152-00	OSCILLATOR, CERAMIC 4MHz

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*A-7061-298-A VA-41 BOARD, COMPLETE (Ref.No. 3,000Series)
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CAPACITOR

Ref.No	Part No.	Description			Remark
C251	1-162-638-11	CERAMIC CHIP	1MF		16V
C252	1-162-638-11	CERAMIC CHIP	1MF		16V
C253	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C254	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C255	1-163-105-00	CERAMIC CHIP	33PF	5%	50V
C256	1-124-778-00	ELECT	22MF	20%	6.3V
C257	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C258	1-124-778-00	ELECT	22MF	20%	6.3V
C259	1-162-638-11	CERAMIC CHIP	1MF		16V
C260	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C261	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C262	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C263	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C264	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C265	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C266	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C267	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C268	1-163-125-00	CERAMIC CHIP	220PF	5%	50V
C269	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C270	1-163-015-00	CERAMIC CHIP	0.0033MF	10%	50V
C271	1-163-137-00	CERAMIC CHIP	680PF	5%	50V
C272	1-162-638-11	CERAMIC CHIP	1MF		16V
C273	1-163-135-00	CERAMIC CHIP	560PF	5%	50V
C274	1-163-141-00	CERAMIC CHIP	0.001MF	10%	50V
C275	1-163-109-00	CERAMIC CHIP	47PF	5%	50V
C276	1-163-145-00	CERAMIC CHIP	0.0015MF	10%	50V
C277	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C278	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C280	1-124-279-11	ELECT	3.3MF	20%	25V
C360	1-162-638-11	CERAMIC CHIP	1MF		16V
C361	1-163-077-00	CERAMIC CHIP	0.1MF	10%	25V
C362	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C363	1-126-199-11	ELECT	6.8MF	20%	35V
C364	1-124-779-00	ELECT	10MF	20%	16V
C365	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C366	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C367	1-124-779-00	ELECT	10MF	20%	16V
C368	1-162-638-11	CERAMIC CHIP	1MF		16V
C369	1-162-638-11	CERAMIC CHIP	1MF		16V
C370	1-124-779-00	ELECT	10MF	20%	16V
C371	1-162-638-11	CERAMIC CHIP	1MF		16V
C372	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C373	1-124-778-00	ELECT	22MF	20%	6.3V
C374	1-126-193-11	ELECT	1MF	20%	50V
C375	1-162-638-11	CERAMIC CHIP	1MF		16V
C376	1-124-255-00	ELECT	1MF	20%	50V
C377	1-126-193-11	ELECT	1MF	20%	50V
C378	1-124-779-00	ELECT	10MF	20%	16V
C379	1-163-021-00	CERAMIC CHIP	0.01MF	10%	50V
C380	1-124-779-00	ELECT	10MF	20%	16V
C381	1-124-779-00	ELECT	10MF	20%	16V
C382	1-124-779-00	ELECT	10MF	20%	16V
C383	1-124-779-00	ELECT	10MF	20%	16V
C384	1-124-779-00	ELECT	10MF	20%	16V
C385	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C386	1-163-141-00	CERAMIC CHIP	0.001MF	5%	50V
C387	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C388	1-124-778-00	ELECT	22MF	20%	6.3V
C389	1-163-101-00	CERAMIC CHIP	22PF	5%	50V
C390	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C391	1-124-779-00	ELECT	10MF	20%	16V.
C392	1-163-111-00	CERAMIC CHIP	56PF	5%	50V
C393	1-124-778-00	ELECT	22MF	20%	6.3V
C394	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C395	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C396	1-163-131-00	CERAMIC CHIP	390PF	5%	50V
C397	1-163-117-00	CERAMIC CHIP	100PF	5%	50V
C398	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C401	1-124-779-00	ELECT	10MF	20%	16V
C402	1-163-123-00	CERAMIC CHIP	180PF	5%	50V
C403	1-124-778-00	ELECT	22MF	20%	6.3V
C404	1-163-021-00	CERAMIC CHIP	0.01MF		50V
C405	1-163-986-00	CERAMIC CHIP	0.027MF	10%	25V
C406	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C407	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C408	1-163-089-00	CERAMIC CHIP	6PF	0.25PF	50V
C409	1-163-033-00	CERAMIC CHIP	0.022MF		50V
C410	1-163-038-00	CERAMIC CHIP	0.1MF		25V
C411	1-163-109-00	CERAMIC CHIP	47PF	5%	50V

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description		Remark
C412	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C413	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C414	1-162-638-11	CERAMIC CHIP 1MF		16V
C415	1-126-205-11	ELECT 47MF	20%	6.3V
C416	1-135-145-11	TANTAL. CHIP 0.47MF	20%	35V
C417	1-135-145-11	TANTAL. CHIP 0.47MF	20%	35V
C418	1-163-125-00	CERAMIC CHIP 220PF	5%	50V
C419	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C420	1-163-114-00	CERAMIC CHIP 75PF	5%	50V
C421	1-163-123-00	CERAMIC CHIP 180PF	5%	50V
C422	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C423	1-163-107-00	CERAMIC CHIP 39PF	5%	50V
C424	1-163-097-00	CERAMIC CHIP 15PF	5%	50V
C425	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C426	1-163-015-00	CERAMIC CHIP 0.0033MF	10%	50V
C427	1-163-115-00	CERAMIC CHIP 82PF	5%	50V
C428	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C429	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C430	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C431	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C432	1-124-779-00	ELECT 10MF	20%	16V
C433	1-124-779-00	ELECT 10MF	20%	16V
C434	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C435	1-163-113-00	CERAMIC CHIP 68PF	5%	50V
C436	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C437	1-163-145-00	CERAMIC CHIP 0.0015MF	10%	50V
C438	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C439	1-163-133-00	CERAMIC CHIP 470PF	5%	50V
C440	1-163-127-00	CERAMIC CHIP 270PF	5%	50V
C441	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C442	1-163-101-00	CERAMIC CHIP 22PF	5%	50V
C443	1-163-088-00	CERAMIC CHIP 5PF	0.25PF	50V
C444	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C445	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C446	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C447	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C448	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C449	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C450	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C451	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C452	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C453	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C454	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C455	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C456	1-124-778-00	ELECT 22MF	20%	6.3V
C457	1-163-118-00	CERAMIC CHIP 110PF	5%	50V
C458	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C459	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V
C460	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C461	1-126-198-11	ELECT 4.7MF	20%	35V
C462	1-163-021-00	CERAMIC CHIP 0.01MF	10%	50V
C463	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C464	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C465	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C466	1-163-117-00	CERAMIC CHIP 100PF	5%	50V
C467	1-163-093-00	CERAMIC CHIP 10PF	5%	50V
C468	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C469	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C470	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C471	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C472	1-163-086-00	CERAMIC CHIP 3PF	0.25PF	50V
C473	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C474	1-124-779-00	ELECT 10MF	20%	16V
C475	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C476	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C477	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C478	1-163-131-00	CERAMIC CHIP 390PF	5%	50V
C479	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C480	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C481	1-163-015-00	CERAMIC CHIP 0.0033MF	10%	50V
C482	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C483	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C484	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C485	1-124-779-00	ELECT 10MF	20%	16V
C488	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C489	1-124-778-00	ELECT 22MF	20%	6.3V
C490	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C491	1-124-779-00	ELECT 10MF	20%	16V
C492	1-126-191-11	ELECT 0.47MF	20%	50V
C493	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C494	1-124-779-00	ELECT 10MF	20%	16V
C495	1-124-779-00	ELECT 10MF	20%	16V
C496	1-126-246-11	ELECT 220MF	20%	4V
C497	1-124-778-00	ELECT 22MF	20%	6.3V
C498	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C499	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C500	1-126-208-11	ELECT 47MF	20%	4V
C501	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C502	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C503	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C504	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C505	1-163-109-00	CERAMIC CHIP 47PF	5%	50V
C506	1-124-778-00	ELECT 22MF	20%	6.3V
C507	1-126-193-11	ELECT 1MF	20%	50V
C508	1-126-205-11	ELECT 47MF	20%	6.3V
C509	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C510	1-135-157-21	TANTAL. CHIP 10MF	20%	6.3V
C511	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C512	1-163-111-00	CERAMIC CHIP 56PF	5%	50V
C513	1-163-105-00	CERAMIC CHIP 33PF	5%	50V
C514	1-124-779-00	ELECT 10MF	20%	16V
C515	1-162-638-11	CERAMIC CHIP 1MF		16V
C516	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C517	1-135-146-21	TANTAL. CHIP 0.68MF	20%	25V
C518	1-126-195-11	ELECT 2.2MF	20%	50V
C519	1-163-038-00	CERAMIC CHIP 0.1MF		25V

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description		Remark
C520	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C521	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C524	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C525	1-163-123-00	CERAMIC CHIP 180PF	5%	50V
C526	1-163-081-00	CERAMIC CHIP 0.22MF		25V
C527	1-163-099-00	CERAMIC CHIP 18PF	5%	50V
C528	1-163-034-00	CERAMIC CHIP 0.033MF		50V
C530	1-163-038-00	CERAMIC CHIP 0.1MF		25V
C531	1-163-035-00	CERAMIC CHIP 0.047MF		50V
C579	1-163-091-00	CERAMIC CHIP 8PF	0.25PF	50V
C580	1-163-019-00	CERAMIC CHIP 0.0068MF	10%	50V
C581	1-163-021-00	CERAMIC CHIP 0.01MF		50V
C582	1-126-209-11	ELECT 100MF	20%	4V
C584	1-163-141-00	CERAMIC CHIP 0.001MF	5%	50V
C585	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C586	1-126-207-11	ELECT 33MF	20%	4V
C587	1-126-207-11	ELECT 33MF	20%	4V
C588	1-135-091-00	TANTAL. CHIP 1MF	20%	16V
C589	1-163-141-00	CERAMIC CHIP 0.001MF	10%	50V
C590	1-126-205-11	ELECT 47MF	20%	6.3V
C591	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V
C592	1-163-036-00	CERAMIC CHIP 0.068MF		50V
C593	1-126-206-11	ELECT 100MF	20%	6.3V
C594	1-126-206-11	ELECT 100MF	20%	6.3V
C595	1-135-151-21	TANTAL. CHIP 4.7MF	20%	4V
C598	1-163-033-00	CERAMIC CHIP 0.022MF		50V
C600	1-163-145-00	CERAMIC CHIP 0.0015MF	10%	50V
C601	1-163-033-00	CERAMIC CHIP 0.022MF		50V

CONNECTOR

CN360	*1-565-543-11	PIN, CONNECTOR (PC BOARD) 4P
CN361	*1-565-542-11	PIN, CONNECTOR (PC BOARD) 3P

TRIMMER

CV360	1-141-331-11	CAP, VAR, TRIMMER (CHIP)
CV361	1-141-311-11	CAP, VAR, TRIMMER (CHIP)

DIODE

D361	8-719-100-05	DIODE 1S2837
D362	8-719-101-23	DIODE 1SS123
D363	8-719-101-23	DIODE 1SS123
D364	8-719-100-05	DIODE 1S2837
D365	8-719-101-23	DIODE 1SS123
D368	8-719-106-43	DIODE RD9.1M-B1
D372	8-719-100-05	DIODE 1S2837
D400	8-719-911-19	DIODE 1SS119

DELAY LINE

DL360	1-415-593-11	DELAY LINE, ULTRASONIC GLASS

Ref.No	Part No.	Description	Remark

FILTER

FL361	1-577-162-11	FILTER, CERAMIC
FL362	1-236-186-21	FILTER, BAND PASS
FL363	1-409-446-21	FILTER, TRAP
FL365	1-236-188-21	FILTER, BAND PASS
FL580	1-236-145-11	FILTER, BAND PASS

IC

IC250	8-759-209-53	IC CXA1204Q
IC360	8-752-034-39	IC CXA1200AQ
IC361	8-752-323-46	IC CXL1502M
IC362	8-752-033-40	IC CXA1201Q
IC363	8-752-033-74	IC CXA1203N
IC364	8-759-710-09	IC NJM2233AM
IC365	8-759-710-09	IC NJM2233AM
IC366	8-759-100-93	IC UPC393G2
IC367	8-759-204-51	IC TC40H008F
IC368	8-759-112-72	IC UPD6142G-101
IC580	8-741-150-51	IC SBX1505-21

COIL

L250	1-408-789-21	INDUCTOR CHIP 100UH
L251	1-408-795-21	INDUCTOR CHIP 330UH
L252	1-410-393-11	INDUCTOR CHIP 100UH
L361	1-410-393-11	INDUCTOR CHIP 100UH
L362	1-412-031-11	INDUCTOR CHIP 47UH
L363	1-412-031-11	INDUCTOR CHIP 47UH
L364	1-412-029-11	INDUCTOR CHIP 10UH
L365	1-410-389-11	INDUCTOR CHIP 47UH
L366	1-410-383-11	INDUCTOR CHIP 15UH
L367	1-410-385-11	INDUCTOR CHIP 22UH
L368	1-410-393-11	INDUCTOR CHIP 100UH
L369	1-410-393-11	INDUCTOR CHIP 100UH
L370	1-410-392-11	INDUCTOR CHIP 82UH
L371	1-410-393-11	INDUCTOR CHIP 100UH
L372	1-410-393-11	INDUCTOR CHIP 100UH
L373	1-410-656-11	INDUCTOR CHIP 150UH
L374	1-410-380-21	INDUCTOR CHIP 8.2UH
L375	1-408-795-21	INDUCTOR CHIP 330UH
L376	1-410-655-11	INDUCTOR CHIP 120UH
L377	1-410-387-11	INDUCTOR CHIP 33UH
L379	1-410-655-11	INDUCTOR CHIP 120UH
L380	1-410-657-21	INDUCTOR CHIP 180UH
L381	1-408-795-21	INDUCTOR CHIP 330UH
L382	1-410-167-41	INDUCTOR CHIP 820UH
L383	1-408-795-21	INDUCTOR CHIP 330UH
L384	1-410-393-11	INDUCTOR CHIP 100UH
L385	1-410-381-11	INDUCTOR CHIP 10UH
L386	1-410-392-11	INDUCTOR CHIP 82UH
L387	1-410-388-21	INDUCTOR CHIP 39UH
L389	1-410-655-11	INDUCTOR CHIP 120UH
L390	1-410-377-11	INDUCTOR CHIP 4.7UH

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
L391	1-410-388-21	INDUCTOR CHIP 39UH	
L392	1-410-384-11	INDUCTOR CHIP 18UH	
L393	1-410-387-11	INDUCTOR CHIP 33UH	
L395	1-410-388-21	INDUCTOR CHIP 39UH	
L396	1-410-391-11	INDUCTOR CHIP 68UH	
L580	1-408-797-11	INDUCTOR CHIP 470UH	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q250	8-729-905-23	TRANSISTOR 2SA1576R	
Q251	8-729-905-35	TRANSISTOR 2SC4081R	
Q252	8-729-905-23	TRANSISTOR 2SA1576R	
Q253	8-729-109-42	TRANSISTOR 2SK94-X2	
Q254	8-729-905-18	TRANSISTOR DTC144EU	
Q361	8-729-101-07	TRANSISTOR 2SB798	
Q362	8-729-905-23	TRANSISTOR 2SA1576R	
Q363	8-729-905-23	TRANSISTOR 2SA1576R	
Q364	8-729-905-23	TRANSISTOR 2SA1576R	
Q365	8-729-905-35	TRANSISTOR 2SC4081R	
Q366	8-729-905-35	TRANSISTOR 2SC4081R	
Q367	8-729-905-23	TRANSISTOR 2SA1576R	
Q368	8-729-905-23	TRANSISTOR 2SA1576R	
Q369	8-729-905-35	TRANSISTOR 2SC4081R	
Q370	8-729-905-35	TRANSISTOR 2SC4081R	
Q371	8-729-905-35	TRANSISTOR 2SC4081R	
Q372	8-729-905-35	TRANSISTOR 2SC4081R	
Q373	8-729-905-35	TRANSISTOR 2SC4081R	
Q374	8-729-905-35	TRANSISTOR 2SC4081R	
Q375	8-729-905-35	TRANSISTOR 2SC4081R	
Q376	8-729-905-35	TRANSISTOR 2SC4081R	
Q377	8-729-905-35	TRANSISTOR 2SC4081R	
Q378	8-729-905-12	TRANSISTOR DTA144EU	
Q379	8-729-905-35	TRANSISTOR 2SC4081R	
Q380	8-729-101-07	TRANSISTOR 2SB798	
Q382	8-729-905-15	TRANSISTOR DTC144WU	
Q383	8-729-905-35	TRANSISTOR 2SC4081R	
Q385	8-729-905-35	TRANSISTOR 2SC4081R	
Q386	8-729-905-35	TRANSISTOR 2SC4081R	
Q387	8-729-905-23	TRANSISTOR 2SA1576R	
Q388	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q389	8-729-905-35	TRANSISTOR 2SC4081R	
Q390	8-729-905-35	TRANSISTOR 2SC4081R	
Q391	8-729-905-35	TRANSISTOR 2SC4081R	
Q392	8-729-905-35	TRANSISTOR 2SC4081R	
Q393	8-729-905-35	TRANSISTOR 2SC4081R	
Q394	8-729-905-23	TRANSISTOR 2SA1576R	
Q395	8-729-905-12	TRANSISTOR DTA144EU	
Q396	8-729-905-18	TRANSISTOR DTC144EU	
Q397	8-729-905-18	TRANSISTOR DTC144EU	
Q398	8-729-905-18	TRANSISTOR DTC144EU	
Q399	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q400	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q401	8-729-122-63	TRANSISTOR 2SA1226	
Q402	8-729-122-63	TRANSISTOR 2SA1226	
Q403	8-729-122-63	TRANSISTOR 2SA1226	
Q404	8-729-122-63	TRANSISTOR 2SA1226	
Q405	8-729-905-18	TRANSISTOR DTC144EU	
Q406	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q407	8-729-905-57	TRANSISTOR DTA124EU	
Q408	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q409	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q410	8-729-905-35	TRANSISTOR 2SC4081R	
Q411	8-729-905-35	TRANSISTOR 2SC4081R	
Q412	8-729-905-35	TRANSISTOR 2SC4081R	
Q413	8-729-905-12	TRANSISTOR DTA144EU	
Q414	8-729-102-07	TRANSISTOR 2SC2223-F13	
Q415	8-729-122-63	TRANSISTOR 2SA1226	
Q416	8-729-905-61	TRANSISTOR DTC124EU	
Q417	8-729-905-61	TRANSISTOR DTC124EU	
Q418	8-729-905-57	TRANSISTOR DTA124EU	
Q420	8-729-905-18	TRANSISTOR DTC144EU	
Q421	8-729-905-35	TRANSISTOR 2SC4081R	
Q423	8-729-903-10	TRANSISTOR FMW1	
Q424	8-729-905-18	TRANSISTOR DTC144EU	
Q425	8-729-905-35	TRANSISTOR 2SC4081R	
Q426	8-729-905-35	TRANSISTOR 2SC4081R	
Q427	8-729-905-23	TRANSISTOR 2SA1576R	
Q580	8-729-905-35	TRANSISTOR 2SC4081R	
Q581	8-729-905-35	TRANSISTOR 2SC4081R	
Q582	8-729-905-35	TRANSISTOR 2SC4081R	

RESISTOR

Ref.No	Part No.	Description	Remark
R251	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R252	1-216-748-11	METAL GLAZE 39K 5% 1/10W	
R253	1-216-121-00	METAL GLAZE 1M 5% 1/10W	
R254	1-216-051-00	METAL GLAZE 1.2K 5% 1/10W	
R255	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R256	1-216-041-00	METAL GLAZE 470 5% 1/10W	
R257	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R258	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R259	1-216-113-00	METAL GLAZE 470K 5% 1/10W	
R260	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R261	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R262	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R263	1-216-035-00	METAL GLAZE 270 5% 1/10W	
R264	1-216-031-00	METAL GLAZE 180 5% 1/10W	
R265	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R266	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R267	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R268	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R269	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R270	1-216-061-00	METAL GLAZE 3.3K 5% 1/10W	
R271	1-216-065-00	METAL GLAZE 4.7K 5% 1/10W	
R272	1-216-109-00	METAL GLAZE 330K 5% 1/10W	
R273	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R274	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R275	1-216-295-00	METAL GLAZE 0 5% 1/10W	

When indicating parts by reference number, please include the board name.

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Ref.No	Part No.	Description				Remark
R276	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R277	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R360	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R361	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R362	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R363	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R364	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R365	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R366	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R368	1-216-117-00	METAL GLAZE	680K	5%	1/10W	
R369	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R370	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R371	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W	
R372	1-216-091-00	METAL GLAZE	56K	5%	1/10W	
R373	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R374	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R375	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R376	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R377	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R378	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R379	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R380	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R381	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R382	1-216-643-11	METAL CHIP	470	0.50%	1/10W	
R383	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R384	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R385	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R386	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R387	1-216-113-00	METAL GLAZE	470K	5%	1/10W	
R388	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R389	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R390	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R391	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R392	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R394	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R395	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R397	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R398	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R399	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R401	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R402	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R403	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R405	1-216-083-00	METAL GLAZE	27K	5%	1/10W	
R406	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R407	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R408	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R409	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R410	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R411	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R412	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R413	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R414	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R415	1-216-043-00	METAL GLAZE	560	5%	1/10W	

Ref.No	Part No.	Description				Remark
R416	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R417	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R418	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R419	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R420	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R421	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R422	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R423	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R424	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R425	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R426	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R427	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R428	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R429	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R430	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R431	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R432	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R433	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R434	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R435	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R436	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W	
R437	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R438	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R439	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R441	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R442	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R443	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R444	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R445	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R446	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R447	1-216-025-00	METAL GLAZE	100	5%	1/10W	
R448	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R449	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R450	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R451	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R452	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R453	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R454	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R455	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R456	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R457	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R458	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R459	1-216-093-00	METAL GLAZE	68K	5%	1/10W	
R460	1-216-045-00	METAL GLAZE	680	5%	1/10W	
R461	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R462	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R463	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R464	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R465	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R466	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R467	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R468	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R469	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description				Remark
R470	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R471	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R472	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R473	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R474	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R475	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R476	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R477	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R478	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R479	1-216-097-00	METAL GLAZE	100K	5%	1/10W	
R481	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R482	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R483	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R485	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R486	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R487	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R488	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R489	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R490	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R491	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R492	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R493	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R494	1-216-033-00	METAL GLAZE	220	5%	1/10W	
R495	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R496	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R497	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R498	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R499	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W	
R500	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R501	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R502	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R503	1-216-059-00	METAL GLAZE	2.7K	5%	1/10W	
R504	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W	
R505	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R506	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R507	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R508	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R509	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R510	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R511	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R512	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R513	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R514	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R515	1-216-047-00	METAL GLAZE	820	5%	1/10W	
R516	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R517	1-216-077-00	METAL GLAZE	15K	5%	1/10W	
R518	1-216-079-00	METAL GLAZE	18K	5%	1/10W	
R519	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R520	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R521	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R522	1-216-085-00	METAL GLAZE	33K	5%	1/10W	
R523	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R524	1-216-699-11	METAL CHIP	100K	0.50%	1/10W	
R525	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R526	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R527	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R528	1-216-021-00	METAL GLAZE	68	5%	1/10W	
R529	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R531	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R532	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R533	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R535	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R536	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R537	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R538	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R539	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R540	1-216-039-00	METAL GLAZE	390	5%	1/10W	
R541	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R542	1-216-081-00	METAL GLAZE	22K	5%	1/10W	
R543	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R544	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R545	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R546	1-216-063-00	METAL GLAZE	3.9K	5%	1/10W	
R547	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R548	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R549	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W	
R550	1-216-138-00	METAL GLAZE	3.3	5%	1/8W	
R551	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R552	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R553	1-216-069-00	METAL GLAZE	6.8K	5%	1/10W	
R554	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W	
R555	1-216-009-00	METAL GLAZE	22	5%	1/10W	
R556	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R557	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R558	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R559	1-216-061-00	METAL GLAZE	3.3K	5%	1/10W	
R560	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R561	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R562	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R563	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R564	1-216-073-00	METAL GLAZE	10K	5%	1/10W	
R565	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R566	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R567	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R568	1-216-071-00	METAL GLAZE	8.2K	5%	1/10W	
R570	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R571	1-216-131-11	METAL GLAZE	2.7M	5%	1/10W	
R572	1-216-041-00	METAL GLAZE	470	5%	1/10W	
R573	1-216-043-00	METAL GLAZE	560	5%	1/10W	
R574	1-216-121-00	METAL GLAZE	1M	5%	1/10W	
R575	1-216-295-00	METAL GLAZE	0	5%	1/10W	
R576	1-216-037-00	METAL GLAZE	330	5%	1/10W	
R577	1-216-027-00	METAL GLAZE	120	5%	1/10W	
R578	1-216-051-00	METAL GLAZE	1.2K	5%	1/10W	
R580	1-216-049-00	METAL GLAZE	1K	5%	1/10W	
R581	1-216-049-00	METAL GLAZE	1K	5%	1/10W	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
R582	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R584	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R585	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R586	1-216-009-00	METAL GLAZE 22 5% 1/10W	
R587	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R588	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R589	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R590	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R591	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R592	1-216-085-00	METAL GLAZE 33K 5% 1/10W	
R593	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R595	1-216-071-00	METAL GLAZE 8.2K 5% 1/10W	
R596	1-216-057-00	METAL GLAZE 2.2K 5% 1/10W	
R597	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R598	1-216-049-00	METAL GLAZE 1K 5% 1/10W	
R599	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R600	1-216-045-00	METAL GLAZE 680 5% 1/10W	
R601	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R602	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R603	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R604	1-216-295-00	METAL GLAZE 0 5% 1/10W	
R605	1-216-015-00	METAL GLAZE 39 5% 1/10W	
R606	1-216-015-00	METAL GLAZE 39 5% 1/10W	

VARIABLE RESISTOR

Ref.No	Part No.	Description	Remark
RV250	1-230-873-11	RES, ADJ, METAL GRAZE 47K	
RV360	1-230-867-11	RES, ADJ, METAL GRAZE 1K	
RV361	1-230-870-11	RES, ADJ, METAL GRAZE 10K	
RV362	1-230-873-11	RES, ADJ, METAL GRAZE 47K	
RV363	1-230-868-11	RES, ADJ, METAL GRAZE 2.2K	
RV364	1-230-868-11	RES, ADJ, METAL GRAZE 2.2K	
RV365	1-230-869-11	RES, ADJ, METAL GRAZE 4.7K	
RV366	1-230-867-11	RES, ADJ, METAL GRAZE 1K	
RV367	1-230-868-11	RES, ADJ, METAL GRAZE 2.2K	
RV368	1-230-870-11	RES, ADJ, METAL GRAZE 10K	
RV369	1-230-869-11	RES, ADJ, METAL GRAZE 4.7K	
RV370	1-230-873-11	RES, ADJ, METAL GRAZE 47K	
RV372	1-230-869-11	RES, ADJ, METAL GRAZE 4.7K	
RV373	1-230-873-11	RES, ADJ, METAL GRAZE 47K	
RV374	1-230-866-11	RES, ADJ, METAL GRAZE 470	

TERMINAL PIN

Ref.No	Part No.	Description	Remark
TP364	1-535-622-11	PIN, TERMINAL	
TP365	1-535-622-11	PIN, TERMINAL	

CRYSTAL

Ref.No	Part No.	Description	Remark
X001	1-577-117-21	VIBRATOR, CRYSTAL (4.43MHz)	
X250	1-567-827-11	VIBRATOR, CRYSTAL	

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Ref.No	Part No.	Description	Remark
	*A-7070-733-A	FV-1 BOARD, COMPLETE (Ref.No. ********************* 5,000Series)	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN160	1-566-527-11	CONNECTOR, FPC (ZIF) 11P	

SWITCH

Ref.No	Part No.	Description	Remark
S160	1-571-101-11	SWITCH, SLIDE (POWER)	
S161	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (SLOW)	
S162	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (FRAME)	
S163	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (PAUSE)	
S164	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (PB)	
S165	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (FF)	
S166	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (STOP)	
S168	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (REW)	

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Ref.No	Part No.	Description	Remark
	*A-7070-743-A	FD-6 BOARD, COMPLETE (Ref.No. ********************* 5,000Series)	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN150	*1-566-537-11	CONNECTOR, FPC (NON ZIF) 5P	

SWITCH

Ref.No	Part No.	Description	Remark
S150	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (ZERO MEMO)	
S151	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (EDIT REV)	
S152	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (DATE)	
S153	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (RESET)	
S154	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (EDIT CUE)	
S155	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (TIME)	

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Ref.No	Part No.	Description	Remark
	*A-7070-744-A	EJ-4 BOARD, COMPLETE (Ref.No. ********************* 5,000Series)	

SWITCH

Ref.No	Part No.	Description	Remark
S169	1-571-102-11	SWITCH, SLIDE (EJECT)	

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Ref.No	Part No.	Description	Remark
	*A-7061-343-A	FC-16 BOARD, COMPLETE (Ref.No. ********************** 5,000Series)	

CAPACITOR

Ref.No	Part No.	Description	Remark
C160	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C161	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C162	1-162-638-11	CERAMIC CHIP 1MF 16V	
C163	1-162-638-11	CERAMIC CHIP 1MF 16V	
C164	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C165	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C190	1-163-033-00	CERAMIC CHIP 0.022MF 50V	
C191	1-124-246-61	ELECT 6.8MF 20% 35V	

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
C192	1-124-246-61	ELECT 6.8MF 20%	35V
C193	1-163-101-00	CERAMIC CHIP 22PF 5%	50V
C194	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C195	1-163-105-00	CERAMIC CHIP 33PF 5%	50V
C196	1-163-021-00	CERAMIC CHIP 0.01MF	50V
C197	1-163-034-00	CERAMIC CHIP 0.033MF	50V
		CONNECTOR	
CN191	*1-566-181-11	PIN, CONNECTOR (PC BOARD) 2P	
		TRIMMER	
CT190	1-141-331-11	CAP, VAR, TRIMMER (CHIP)	
		DIODE	
D160	8-719-404-12	DIODE MA159	
D161	8-719-105-73	DIODE RD4.7M-B2	
D190	8-719-105-99	DIODE RD6.2M-B1	
		IC	
IC190	8-759-142-88	IC UPD7503G-A80-12	
IC191	8-759-937-56	IC S-8054ALB-LM-S	
		TRANSISTOR	
Q160	8-729-905-23	TRANSISTOR 2SA1576R	
Q161	8-729-905-23	TRANSISTOR 2SA1576R	
Q163	8-729-905-23	TRANSISTOR 2SA1576R	
Q164	8-729-905-23	TRANSISTOR 2SA1576R	
Q165	⚠.8-729-109-42	TRANSISTOR 2SK94-X2	
Q166	8-729-905-35	TRANSISTOR 2SC4081R	
Q167	8-729-903-97	TRANSISTOR FMS1FE	
Q168	8-729-905-35	TRANSISTOR 2SC4081R	
Q169	8-729-810-10	TRANSISTOR 2SA1676	
Q169	8-729-905-12	TRANSISTOR DTA144EU	
Q190	8-729-810-19	TRANSISTOR 2SC4396	
Q191	8-729-905-23	TRANSISTOR 2SA1576R	
		RESISTOR	
R120	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R121	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R122	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R123	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R124	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R125	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R126	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R127	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R128	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R129	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R130	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R131	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R132	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R133	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R134	1-216-073-00	METAL GLAZE 10K 5%	1/10W

Ref.No	Part No.	Description	Remark
R135	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R136	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R137	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R138	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R139	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R140	1-216-105-00	METAL GLAZE 220K 5%	1/10W
R141	1-216-089-00	METAL GLAZE 47K 5%	1/10W
R142	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R143	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R144	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R160	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R161	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R162	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R163	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R164	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R165	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R166	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R167	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R168	1-216-093-00	METAL GLAZE 68K 5%	1/10W
R169	1-216-748-11	METAL GLAZE 39K 5%	1/10W
R170	1-216-129-00	METAL GLAZE 2.2M 5%	1/10W
R171	1-216-115-00	METAL GLAZE 560K 5%	1/10W
R172	1-216-105-00	METAL GLAZE 220K 5%	1/10W
R173	1-216-121-00	METAL GLAZE 1M 5%	1/10W
R174	1-216-530-00	METAL GLAZE 390K 1%	1/10W
R175	1-218-167-11	METAL GLAZE 330K 1%	1/10W
R176	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R177	1-216-121-00	METAL GLAZE 1M 5%	1/10W
R178	1-216-295-00	METAL GLAZE 0 5%	1/10W
R190	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R191	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R192	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R193	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R194	1-216-109-00	METAL GLAZE 330K 5%	1/10W
R195	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R196	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R197	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R198	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R199	1-216-073-00	METAL GLAZE 10K 5%	1/10W
		SWITCH	
S190	1-570-870-21	SWITCH, SLIDE (AUTO LOCK)	
S191	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (TITLE 1)	
S192	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (TITLE 2)	
S193	1-570-909-21	SWITCH, TACTIL (REFLOW TYPE) (MEMORY)	
S194	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (COLOR)	
S195	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (FOCUS)	
S196	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE)(BACK LIGHT)	
S197	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (SHUTTER SPEED)	
		TERMINAL PIN	
TP190	*1-535-622-11	PIN, TERMINAL	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
TP191	*1-535-622-11	PIN, TERMINAL	

CRYSTAL

Ref.No	Part No.	Description	Remark
X190	1-527-997-21	VIBRATOR, CRYSTAL (32.768KHz)	

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*A-7061-344-A MC-24 BOARD, COMPLETE (Ref.No. ********************** 2,000Series)

CAPACITOR

Ref.No	Part No.	Description	Remark
C001	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C002	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C585	1-163-037-11	CERAMIC CHIP 0.022MF 10% 25V	
C586	1-124-225-00	ELECT 100MF 20% 6.3V	
C587	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C588	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C589	1-163-038-00	CERAMIC CHIP 0.1MF 25V	
C590	1-163-137-00	CERAMIC CHIP 680PF 10% 50V	
C591	1-163-077-00	CERAMIC CHIP 0.1MF 50V	
C592	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C593	1-163-021-00	CERAMIC CHIP 0.01MF 10% 50V	
C594	1-162-638-11	CERAMIC CHIP 1MF 16V	
C595	1-163-081-00	CERAMIC CHIP 0.22MF 25V	
C596	1-124-225-00	ELECT 100MF 20% 6.3V	
C598	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	
C599	1-163-141-00	CERAMIC CHIP 0.001MF 10% 50V	

CONNECTOR

Ref.No	Part No.	Description	Remark
CN585	*1-565-542-11	PIN, CONNECTOR (PC BOARD) 3P	

DIODE

Ref.No	Part No.	Description	Remark
D585	8-719-105-99	DIODE RD6.2M-B1	

IC

Ref.No	Part No.	Description	Remark
IC585	8-759-820-51	IC LA7293M	

JACK

Ref.No	Part No.	Description	Remark
J585	1-507-921-00	JACK (MIC)	
J586	1-563-454-11	JACK, MINIATURE (MIC DC)	

TRANSISTOR

Ref.No	Part No.	Description	Remark
Q585	8-729-905-35	TRANSISTOR 2SC4081R	

RESISTOR

Ref.No	Part No.	Description	Remark
R585	1-216-073-00	METAL GLAZE 10K 5% 1/10W	
R586	1-216-081-00	METAL GLAZE 22K 5% 1/10W	
R587	1-216-097-00	METAL GLAZE 100K 5% 1/10W	
R588	1-216-059-00	METAL GLAZE 2.7K 5% 1/10W	
R589	1-216-069-00	METAL GLAZE 6.8K 5% 1/10W	
R590	1-216-025-00	METAL GLAZE 100 5% 1/10W	
R591	1-216-063-00	METAL GLAZE 3.9K 5% 1/10W	
R592	1-216-095-00	METAL GLAZE 82K 5% 1/10W	

SWITCH

Ref.No	Part No.	Description	Remark
S585	1-570-910-21	SWITCH, TACTIL (REFLOW TYPE) (REC START/STOP)	

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*A-7070-734-A PA-13 BOARD, COMPLETE (Ref.No. ********************** 4,000Series)

JACK

Ref.No	Part No.	Description	Remark
J991	1-550-104-32	HOLDER, BATTERY	

COIL

Ref.No	Part No.	Description	Remark
L990	1-412-026-11	INDUCTOR CHIP 1UH	
L991	1-412-026-11	INDUCTOR CHIP 1UH	
L992	1-412-026-11	INDUCTOR CHIP 1UH	

IC LINK

Ref.No	Part No.	Description	Remark
PS990⚠	1-532-841-21	LINK, IC	
PS991⚠	1-532-841-21	LINK, IC	

RESISTOR

Ref.No	Part No.	Description	Remark
R990	1-216-295-00	METAL GLAZE 0 5% 1/10W	

SWITCH

Ref.No	Part No.	Description	Remark
S990	1-570-870-21	SWITCH, SLIDE (EDIT)	

CONNECTOR

Ref.No	Part No.	Description	Remark
W991	1-559-927-41	CABLE, FLAT (1.0MM PITCH) 5P	
W992	1-535-658-11	TERMINAL BOARD	

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*A-7070-747-A ZM-8 BOARD, COMPLETE (Ref.No. ********************** 4,000Series)

SWITCH

Ref.No	Part No.	Description	Remark
S970	1-571-315-11	SWITCH, KEY BOARD (TELE)	
S971	1-571-315-11	SWITCH, KEY BOARD (WIDE)	

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A-7070-748-A SW-92 BOARD, COMPLETE (Ref.No. ********************** 4,000Series)

CONNECTOR

Ref.No	Part No.	Description	Remark
CN930	*1-566-189-11	PIN, CONNECTOR (PC BOARD) 10P	
CN931	*1-565-542-11	PIN, CONNECTOR (PC BOARD) 3P	
CN932	*1-566-195-11	PIN, CONNECTOR (PC BOARD) 2P	

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Ref.No	Part No.	Description	Remark
		DIODE	
D910	8-719-911-19	DIODE 1SS119	
		JACK	
J930	1-565-276-11	JACK, ULTRA SMALL 1P	
J931	1-507-921-00	JACK	
		COIL	
L930	1-410-369-11	INDUCTOR CHIP 1UH	
L932	1-410-369-11	INDUCTOR CHIP 1UH	
		SWITCH	
S930	1-553-977-00	SWITCH, SLIDE (STAND BY)	
S931	1-570-689-11	SWITCH, KEY BOARD (REC START/STOP)	

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MISCELLANEOUS

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	1-464-993-11	CONVERTER, DC-DC
	1-535-574-11	TERMINAL, SHAFT GROUND
	1-542-101-11	MICROPHONE (C-2020)
	1-547-284-11	LENSE, ZOOM (VCL-906XB)
	1-562-879-11	CONNECTOR, CARD EDGE 19P
	1-562-880-11	CONNECTOR, CARD EDGE 15P
	1-566-535-11	CONNECTOR, FPC (ZIF) 19P
	1-574-083-11	CABLE, FLAT (1.0MM PITCH) 15P
	1-626-231-11	FP-118 FLEXIBLE BOARD
	1-626-232-11	FP-123 FLEXIBLE BOARD
	1-626-233-11	FP-124 FLEXIBLE BOARD
	1-807-238-11	SENSOR, DEW CONDENSATION
	1-808-385-11	L.C.D
C901	1-161-032-00	CAP CERAMIC 0.01MF
IC600	A-7090-878-A	CCD ASSY (CCD IMAGER)
J361	1-537-142-11	TERMINAL BOARD (AV OUT)
L951 ⚠	1-451-310-21	DEFLECTION YOKE (B/W)
M901	A-7048-177-A	DRUM ASSY (DGU-27B-R)
M902	8-835-309-01	MOTOR, DC BHF-3301C (CAPSTAN)
M903	1-541-508-11	MOTOR, DC (LA14-323F) (LOADING)
M904	3-707-442-01	METER, IG (IPIS MOTOR)
M905	3-707-448-01	MOTOR UNIT, AF
M906	3-707-452-01	MOTOR UNIT, ZOOM
S902	1-553-226-00	SWITCH, LEAF (CC DOWN)
V901 ⚠.	1-546-065-11	CATHODE-RAY TUBE, B/W (MOIJVV47WB)

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ACCESSORIES AND PACKING MATERIALS

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Part No.	Description	Remark
3-786-051-41	MANUAL, INSTRUCTION	
3-786-051-51	MANUAL, INSTRUCTION (AEP/E MODEL)	
3-786-051-61	MANUAL, INSTRUCTION (AEP MODEL)	
3-786-051-71	MANUAL, INSTRUCTION (E MODEL)	
*3-725-185-01	CUSHION (UPPER)	
*3-725-186-01	CUSHION (LOWER)	
*3-764-631-12	INSTRUCTION, DEW CONDENSATION	
4-344-284-00	BAG, PROTECTION (AEP/AUS MODEL)	

ACCESSORIES AND PACKING MATERIALS (KIT)

1-571-164-11	SWITCH, ANTENNA CHANGE (CABLE)
3-712-673-01	SCREWDRIVER
3-712-595-21	BELT, SHOULDER
*3-725-169-31	SLEEVE, ACC KIT
*3-725-170-02	CUSHION (UPPER), ACC
*3-725-171-01	CUSHION (LOWER), ACC
*3-728-625-21	INDIVIDUAL CARTON
** AC-V30	AC POWER ADAPTOR
*** NP-55	RECHARGABLE BATTERY
*** RFU-89EA	RF MODULATER

** MARK PARTS IS AVAILABLE FOR REPIR SERVICE

** MARK PARTS IS AVAILABLE AS A OPTIONAL ACCESSORIES

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HARDWARE LIST

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SCREW

7-621-255-15	SCREW +P 2X3
7-621-255-45	SCREW +P 2X6
7-621-281-15	SCREW +P 2X2
7-621-772-00	SCREW +B 2X3
7-627-850-17	SCREW, PRECISION +P 1.4X2.5
7-627-552-07	SCREW, PRECISION +P 1.7X2.5
7-627-852-18	SCREW, PRECISION +P 1.7X4 TYPE3
7-627-852-38	SCREW, PRECISION +P 1.7X1.8 TYPE3
7-627-553-37	SCREW, PRECISION +P 2X3 TYPE 3
7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT
7-685-203-19	SCREW +KTP 2X5 TYPE2 NON-SLIT

STOP RING

7-624-101-01	STOP RING 1.2 (E TYPE)
7-624-102-04	STOP RING 1.5, TYPE -E

TAPPING

7-685-105-19	TPG +P 2X8, TYPE 2, NON-SLIT

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Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.